

THE COMBAT EDGE

DECEMBER 1997



PEACE ON EARTH

Happy Holidays!

The Combat Edge

AIR COMBAT COMMAND
SAFETY MAGAZINE

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AFIT Student, Marquette University
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ACCent on Safety

HO, HO, HO! 'Tis the season to be jolly, Fa la la la, La la la la ... The Christmas and New Year season is a time for families and friends to share all the good things which have blessed them in the past 12 months. It's a time that we can look forward to all the hope and promise yet to come. Of course, the good is only made special because there is a bad. In the Dickens' Christmas story, it's Scrooge who dotes on the bad and says, "Bah, Humbug!" Well, just call me Ebenezer, 'cause it's time to do some of that safety stuff and remind you of the things that have gone not quite so well.

First off, did you know that Fiscal Year 1997 saw twice as many ACC folks die in automobile accidents as the year before? Double! And who were they? Mostly, they were young and single, and the accidents happened during the hours of darkness. Are you surprised? Insurance companies aren't; these are just the kind of statistics that they use regularly to set their rates by. If we're not surprised by the increased risk to these folks, then what are we doing about it? More importantly, what are YOU doing about it?

And how about aircraft accidents? Would you believe that the majority of our operations factor mishaps involved the supposedly "older and wiser" crowd of our "experienced" aviators? Even on the logistics side, it was often some of our most experienced maintainers who were making the calls that ended up with a jet logging one less landing than takeoffs. So what are we doing about that? What are YOU doing about that?

[Cue the Ghosts of Christmas Past, Present, and Future: lead in drum roll ...]

Okay, this was not our best year. The good news is that we have a tool to make things better — and that's Operational Risk Management (ORM). Remember, tools don't do anything for us until we take 'em outa the box and use them. "ORM! That's the ticket!" What, you're still a non-believer? Would it help if we used some Christmas tales to look at risk management? You don't think so? Don't you think that Frosty the Snowman fell a little short in his "What if" scenarios? You know, the question, "What if the sun comes out?" I mean, this is not like doing brain surgery! Instead of that old stovepipe hat, he might have gone for a sombrero so he could stay in the shade and keep his cool. Now, that's risk management!

Even Jolly Old St. Nick used ORM. Sure, look at Rudolph. Don't you think using him to guide the sleigh was ORM in action? Remember, ORM doesn't have to be complicated, just rigorously applied. Before you start ANY task, take time to think: (1) What can go wrong; (2) How bad can it get; (3) What can I do to make it not so bad; and (4) If I can't make it any less risky, maybe I should get the Boss's okay. Now is that simple, or what? More of that common sense stuff, right? What better time than over the holidays to put ORM to use? Jus' do it!

Ya'll have a Merry Christmas. BE SAFE ... and be sure to come back for the New Year!

*Colonel Turk Marshall
Chief of Safety*

Some Really

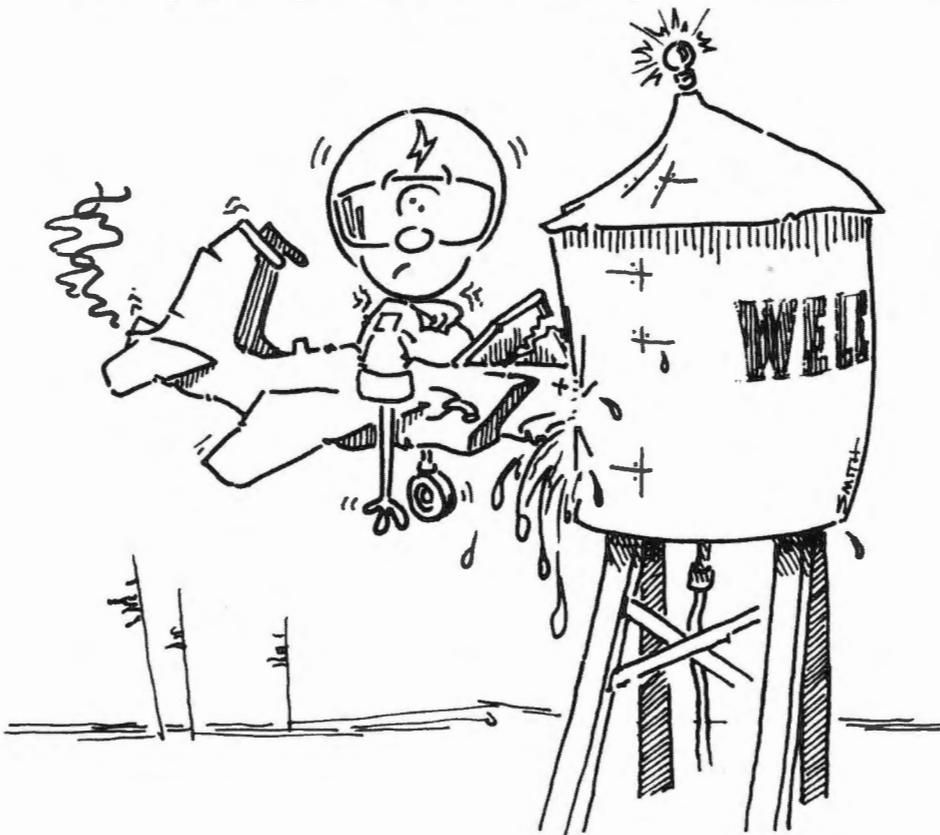
Colonel Vinnie Noto
HQ ACC/SEF
Langley AFB VA

The editor has been bugging me for a new article, and I haven't got a clue what to write about. I'm looking out my office window in The Harbour Centre in downtown Hampton VA, looking for inspiration. Yes, we've moved, a monumental event. It's amazing how much stuff (junk) a directorate can collect, store, save, hide — whatever you call putting stuff away that had some value to someone sometime ago — just in case you want it later, say maybe 10 years from now. During the move, I came across some old mishap reports. Paging through them, I was

amazed at how similar the reports are now to those done 10 to 15 years ago. Although the books and briefings today are all high-tech and well done, with the best investigation techniques and equipment, many common threads can be seen in both the old and new.

First, we continue to do some really "dumb" things. Here are some examples. Crewmembers don't follow "CAPs" or "Boldface" even though they know them cold. We sometimes try in a moment of crisis to out think a well thought out course of action, one we've practiced and planned on using. We've

forgotten that the Dash One isn't the only guidance we need to fly with; range procedures, formation regulations, weapons manuals, AFF's — even our own local procedures — are published not for show, but to be used and followed. We continue to taxi aircraft that neither grow nor change size into spaces that just somehow got smaller since the last time we looked! Formation leadership is just that: leadership! We don't vote in the air. A kinder, gentler world doesn't hack it when a heater is being fired at you. Why would you strap the jet to your back without wearing the correct clothes? Freezing to death in a snow bank or getting so hypothermic you can't be rescued because your thermal underwear is stuffed in a drawer at home (or it's just too uncomfortable to wear) is not smart. You survived the ejection, why die while waiting to be picked up? So far this year, we've put bombs into a range tower at least twice: soon range personnel will be getting hazardous duty pay! Maintenance technicians continue to rely on memory instead of using technical data. We still forget to put write-ups in the forms when we disconnect equipment and then forget to reconnect them — could this be possible? Just this year we've found egress system lines backwards and clamps left off environmental control system



Dumb Stuff!

(ECS) ducts; used unauthorized shortcuts in routine servicing procedures; and performed intake inspections in less than 30 seconds when they should take 10 minutes. In flight, we are dropping more aircraft parts than bombs!

Second, just because we fly better and more sophisticated aircraft doesn't mean we still can't suffer from spatial disorientation (SD) or G-induced loss of consciousness (GLOC). No one has yet found a way to make our senses respond any different now to turns, climbs, dives, and the forces of gravity than when we flew with only a turn and slip indicator, a pressure altimeter, and a magnetic compass. We've lost two aircraft this year with SD as a significant factor. We've also made some great strides and advances with G-suits and Combat Edge equipment, and the published material and education on the subject is great. So how could we lose an aircraft? Well, you still have to take care of your body and recognize factors that tell you not to do that 8G turn, or turn your head to watch your bombs strike the target in the dark of night.

Third, highly complex, multi-functional equipment sometimes breaks! Despite the best efforts of those who build and fix our equipment, failures do happen. When they do happen, do we forget to write them up, do we just throw the



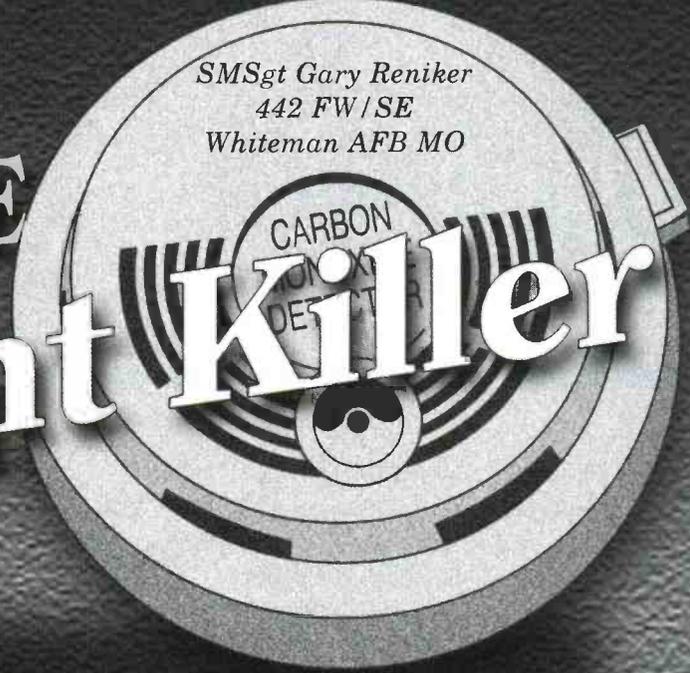
We all have it in our gunsights to fix these simple human errors. Just fixing the "really dumb stuff" could cut our mishap rate in half.

part in the trash pile when removed and get a new one, or do we submit a deficiency report and have that nagging failure analyzed? When a step is missing or dropped from the Tech Order (TO), do we just blow it off or do we submit the paperwork to get it fixed? Or worse, do we have a "proce-

dure" in our desk drawer because the TO isn't correct — yes, we still do!

Do we learn from our mistakes? Yes, otherwise our mishap rate would be astronomical. But all these events I've alluded to didn't just happen 10 to 15 years ago; they happened this year and most have come directly from Class A accident reports. Today as we speak, some crewmember is stepping to the jet without gloves, or proper mental preparation; some maintenance technician has an unauthorized procedure at a desk just waiting to be used; or worse, someone has decided that time tested, written procedures are not the way to do it — they all know better! We all have it in our gunsights to fix these simple human errors. Just fixing the "really dumb stuff" could cut our mishap rate in half. Let's make our legacy one where we eliminated the "really dumb stuff" and got to work on the really complicated causes of mishaps! ■

CARBON MONOXIDE The Silent Killer



Carbon monoxide detectors, new on the market the last 2 years, are proving popular this winter season. Raised awareness of the dangers of this gas was in part due to the death in September 1994 of former tennis star Vitas Gerulaitis after a broken propane heater leaked carbon monoxide.

Carbon monoxide is a colorless, odorless, tasteless gas blamed for the accidental deaths of 250 people a year in the United States and the illness of 10,000 others. Carbon monoxide is a byproduct of combustion and is present whenever fuel is burned. A faulty furnace might cause problems, for instance, or a car left running in a garage. Water heaters, space heaters, ovens or ranges, clothes dryers, fireplaces and wood-burning stoves are potential sources of carbon monoxide buildup.

In low levels, carbon monoxide can cause flu-like symptoms, including headache, nausea, dizziness and fatigue. High concentrations are deadly.

It has been only in the last few years that technology has

made detectors affordable for residential use. There are two basic types: the kind that plugs in and the kind that comes with a battery. They are designed to sound the alarm before dangerous levels of carbon monoxide accumulate. The plug-in usually sells for about \$50. The battery type costs \$20 but requires a new sensor pack every couple of years.

The Consumer Product Safety Commission recommends that every house have at least one carbon monoxide detector with an audible alarm. Although the safety commission recommended installation near a sleeping area, it seems that many consumers are installing them in places where traces of carbon monoxide are bound to be found, such as near the furnace or in the garage that has figured in many "nuisance calls" to the fire department.

According to a news release from First Alert, exposure to carbon monoxide at 200 parts per million for 20 minutes can cause a headache. Exposure at 1,400 ppm for 20 minutes can cause a

coma or brain damage. Occupational Safety and Health Administration Table Z-1 identifies the permissible exposure limit should not exceed 50 ppm.

Prevent Carbon Monoxide Poisoning

Here are a few safety tips:

- Don't try to heat your kitchen or home by leaving the gas stove burners on or the oven on with the door open.
- Never burn charcoal indoors.
- If you have an attached garage, pull the car all the way out when warming it up. Leaving the garage door open is not enough.
- Have a professional regularly check combustion appliances, including your fireplace and chimney. ■

For a free brochure about carbon monoxide, write:

Underwriters Laboratories
333 Pfingsten Road
Northbrook IL 60062

Fleagle

WELL, ANOTHER YEAR HAS SLIPPED BY AND HERE WE ARE ONCE MORE SMACK IN TH' MIDDLE OF A HOLIDAY SEASON.



FOLKS IS IN SUCH A HEADLONG HURRY TO GET THROUGH THIS TIME OF YEAR THAT FEW STOP TO THINK WHAT IT'S ALL ABOUT.



CLEAR THINKING SOLID CITIZENS TAKE ON A COMPLETE DIFFERENT OUTLOOK WHEN THEY IS FACED WITH CHRISTMAS SHOPPING, DRAGGING A FRESH CUT TREE AN' DRINKING EGG NOG.



THERE ARE OTHER MOTIVATING FORCES THAT HELP NUMB TH' BRAIN, BUT WE DON'T HAVE TIME OR SPACE TO GO INTO THEM JUS' NOW.



INSTEAD, DO YOURSELF A FAVOR. TAKE A FEW MINUTES OUT OF YOUR BUSY SCHEDULE AND WITHOUT PRESENTS OR SONG, WISH YOUR FRIENDS A HAPPY AN' SUCCESSFUL HOLIDAY SEASON.



MERRY CHRISTMAS
FROM FLEAGLE AND ALL THE
FOLKS OF ACC.



DEBRIEF

Major Bruce "Spike" Benyshek, USAF
Training Squadron Ten
NAS Pensacola FL

Trust and the Aviator

When you ask, "What makes so-and-so a great aviator?" the responses follow these lines: "Good hands," "Knows the books," "Excellent headwork," etc. But there is something else — almost too obvious, one would think — and in the story that follows, I learned that without it you cannot be effective, let alone safe.

It was January 19, 1991. I was

a change — a 1,000 foot ceiling with rain, but it would be solid up to 30,000 en route. We could expect thunderstorms along the way. Our designated divert field, called KKMC, was forecast to have 4 miles visibility and a 3,000 foot ceiling.

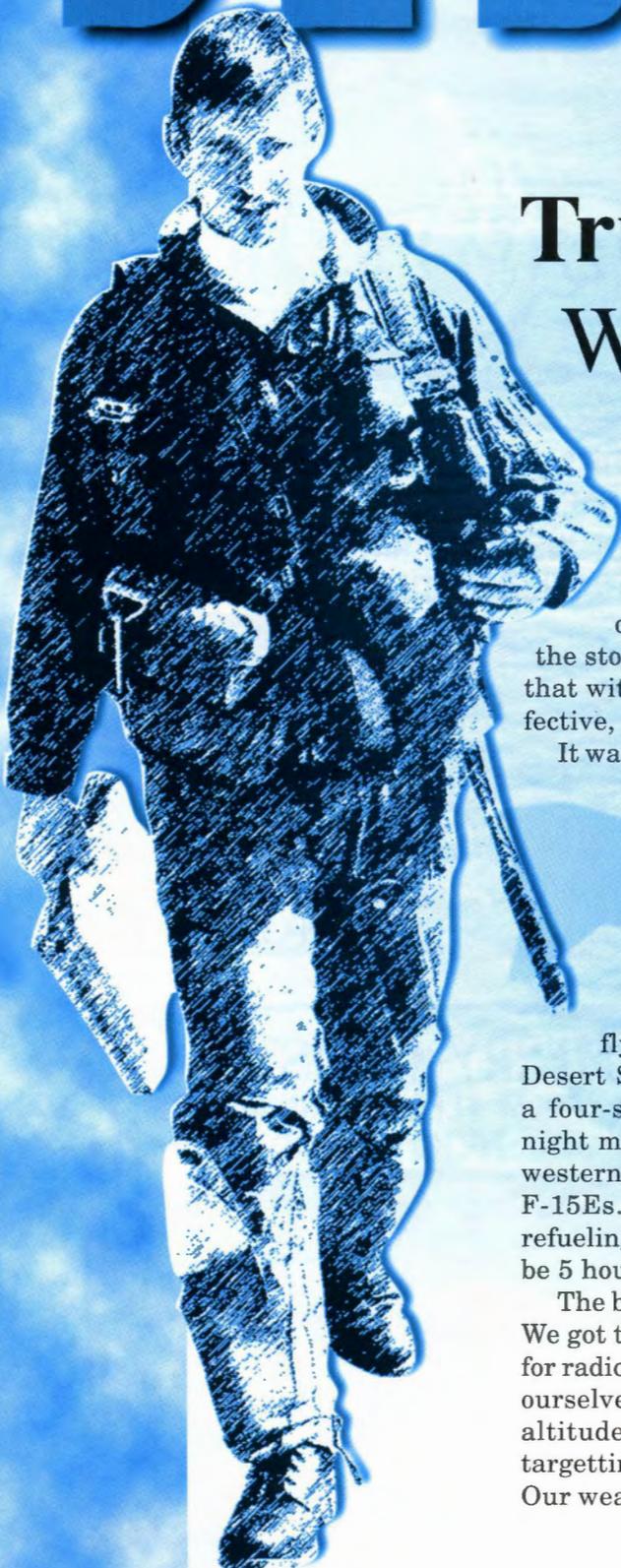
We launched about 2300 local, got rejoined, tanked twice, and went in-country. The Iraqis were wising-up and were afraid to turn their radars on, so not one of us shot a HARM that night. The

flying my third mission of Desert Storm, as number two of a four-ship of F-4Gs. It was a night mission to cover targets in western Iraq. The strikers were F-15Es. There would be 4 air refuelings, and the mission would be 5 hours long.

The brief was straightforward. We got the classified information for radio frequencies, squawks for ourselves and the friendlies, safe altitudes, discussed the HARM targetting and air-to-air plan, etc. Our weather at home was OK for

Eagles were late and had to make two passes to get their bombs off, so we had to hang out a little extra to cover them. When they finished with their bombs, we started to head for the tanker. We were a little shy on gas, but not bad.

Because it was night, we were flying a radar-trail formation. I was 7 miles behind my lead; number three was 20 miles behind us, with number four 7 miles behind him. As we headed to the tanker track, lead's radar crumped. I joined on him, and he gave me the



lead.

We had been in the weather ever since takeoff, now almost 4 hours ago. I had an extreme case of the leans (I felt like I was in 100 degrees of bank while straight-and-level). When we got to the tanker track, we discovered that some genius had decided to put 12 tankers and another 8 receivers in the same track. We had an IFF interrogator feature in our radars; but the tankers were so close together, we couldn't distinguish on radar which tanker - and squawk - was ours.

Fortunately, we popped into a momentary break in the weather long enough for me to see what I thought was our tanker. We were in and out of cloud tops, it was night, I had the leans, and lead was telling me he needed gas now. We split and went to two different tankers. Lead tried to join on what turned out to be a B-52G on the boom (his first clue was the tanker had 8 engines). After I got my gas, I was still so disoriented from the leans, I physically could not rejoin to lead's tanker — even though I could see it straight ahead of me! We came home individually.

Meanwhile, numbers three and four had gotten split up. Four managed to get to a tanker, but three got spit out, stuck 30 NM in trail of the tankers. It would take him 20 minutes to catch up and his fuel was low, so he decided to divert to KKMC.

Imagine my surprise an hour later when I landed and lead came storming up to me: "What

happened to three?" I said, "What do you mean?" "They bailed out!!!"

It turns out that:

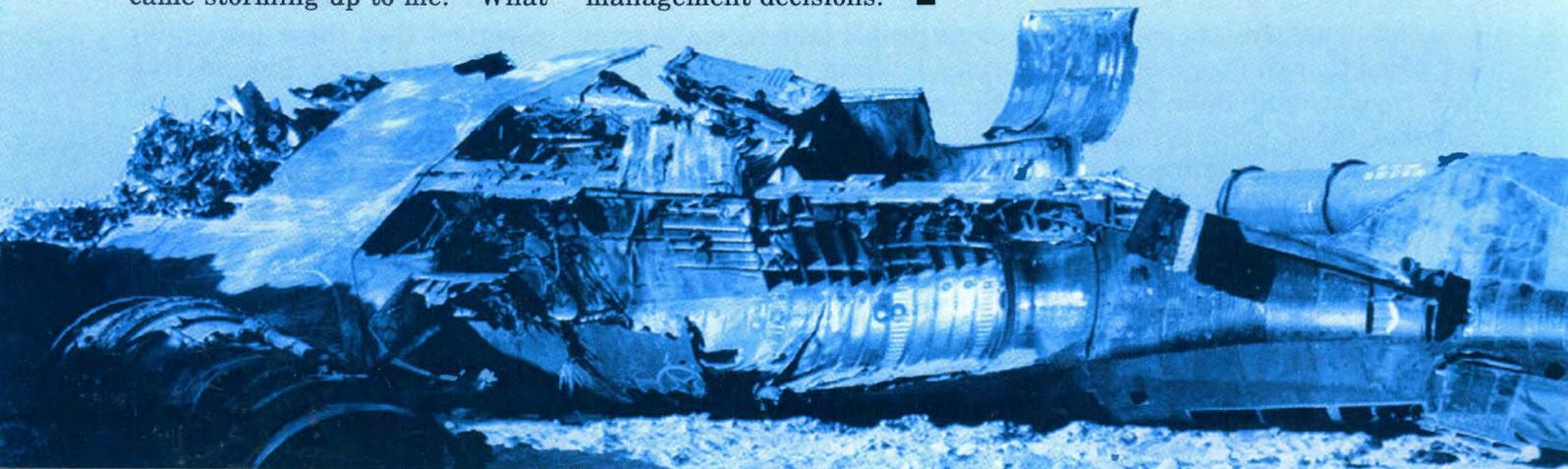
- (1) KKMC was weathered-in with zero-zero in fog.
- (2) While doing construction work near the runway that day, the power line to the ILS and runway lights was cut — and power was still down.
- (3) After doing 5 PARs down to minimums (he didn't have enough gas to go elsewhere), they bailed out.

Trust in aviation is something we take for granted. You assume — and trust — that your flight members and crewmembers are competent and conscientious. You trust that your mechanics have put the airplane together properly, and that your weapons will work if needed. You trust that support agencies will do their jobs. We trusted that the weather brief we received would continue to be valid or updated with any changes by the controlling agency.

The result? We lost a perfectly good jet because we trusted the system a little too much. To say that you can't trust in aviation is inappropriate — you'd never leave the ground otherwise. In our business, trust is an integral part of aviation. The key is knowing when to trust — and how much. As for myself, I learned that night to be a little more wary of everything and ask a lot more "what if" questions so that I would have the best information available to make smart risk management decisions. ■

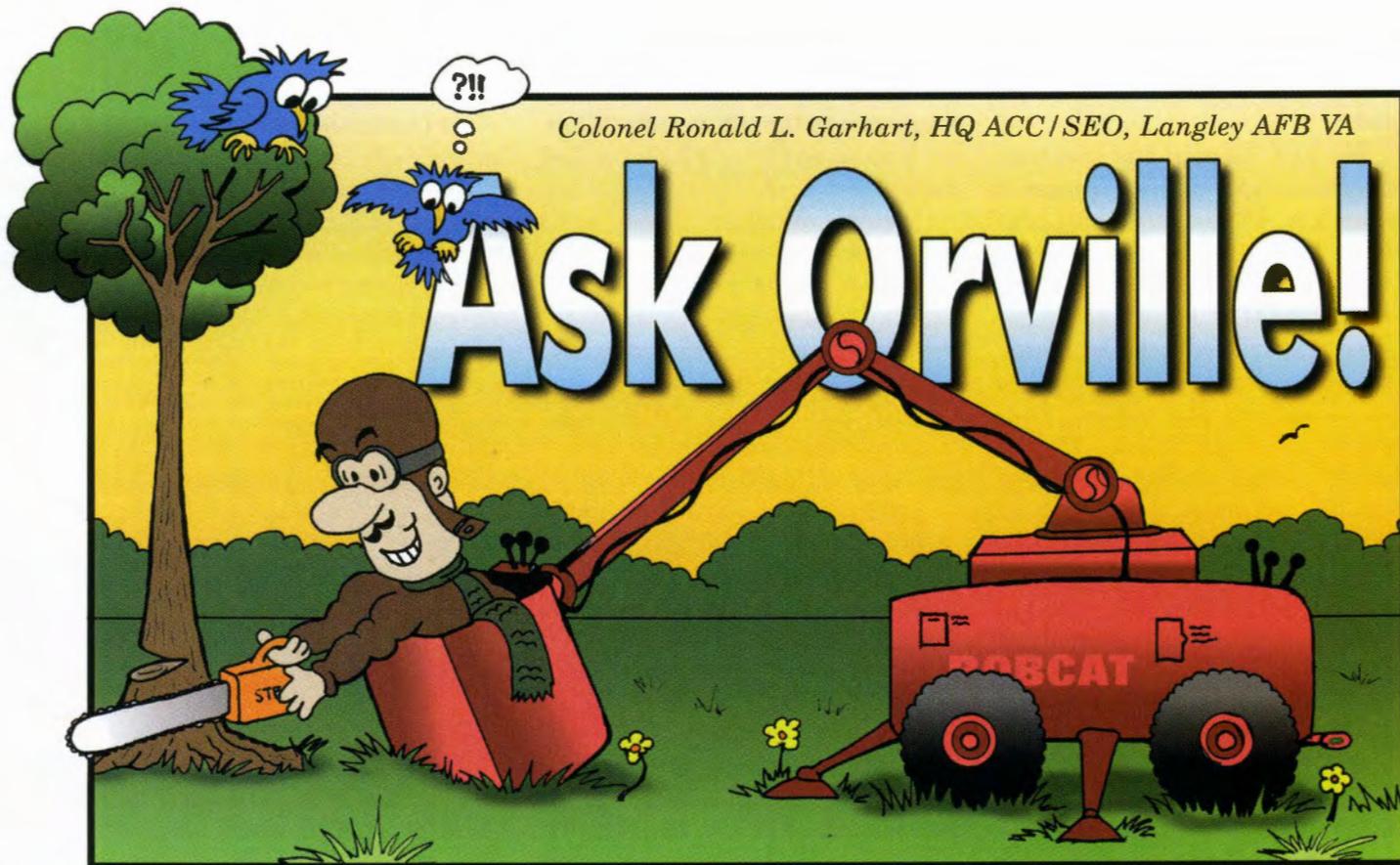
As indicated by the author, nothing abrogates the aviator of responsibility for his/her aircraft and the safe conduct of the mission at hand. Our goal is to preserve combat capability through aggressive mishap prevention, and Operational Risk Management (ORM) gives us the right tools to systematically accomplish this. Identifying the potential sources of danger which cause risk (i.e., deviations from a plan, bad weather, runway restrictions/limitations, etc.) allows for proper assessment of the probability and severity of those risks. This assessment then allows consideration of potential outcomes and provides a basis to determine what control measures can be implemented to counter the assessed risks. Using these steps in the risk management process ultimately helps us determine which course of action to take in order to accomplish the mission safely. Remember that principles of airmanship, regulatory procedures, risk management guidance, and lessons learned from previous operations are key to preventing mishaps while maximizing mission success.

-Ed.



Colonel Ronald L. Garhart, HQ ACC/SEO, Langley AFB VA

Ask Orville!



This month's letter logged an ocean crossing — flying in from Mr. Joe Raposo, 65th ABW, Safety and Occupational Health Manager at Lajes. Joe writes:

Dear Orville:

This morning, as I looked out of my office window, I observed two laborers pruning a tree. All's fine at first glance; but as I looked closer, it appeared that they were actually standing in the tree they were pruning. Hmmmmm! I walked outside to get a closer view. The workers were standing on branches about 12 feet off the ground, securing themselves by one hand, while sawing off the surrounding branches with the free hand. I asked them if they ever heard of Operational Risk Management (ORM), and they looked at me as if I were from another planet. I did a quick "Time Critical" risk assessment and

offered them a few obvious control measures to consider; but they rejected my assistance, saying it was safer the way they were doing it. I was not surprised, and a supervisor was nowhere to be found.

Orville, what step of the ORM process does one use to influence the change of such attitudes? Do I work with the employees or managers? I'm frustrated because I feel that some people (mostly managers) want nothing more than to get the job done — at whatever the cost. I don't know. Does ORM even apply to tree pruning?

Help me, Orville!
"Joe at Lajes"

Dear Joe:

To answer your last question first; ORM unequivocally, undeniably, and unquestionably possesses an inherent potential benefit for those engaged in the removal of superfluous or undesirable fibrous appendages through the art of tree surgery (i.e., ORM "does" apply to tree pruning, Joe.) With that out of the way, permit me to get to the next part of your letter that attracted my attention. You observed that these particular arboriculturists looked like "pigs staring at a wristwatch" when you mentioned ORM. Is it safe for me to assume that they have not yet been afforded the benefit of going through the

mandatory computer based ORM training that ACC released in April? Not to worry, they are not alone. But Joe, how do you expect the managers, laborers, or anyone else to apply ORM if they have not been at least minimally trained? The first thing that needs to be accomplished is to ensure that "everyone" (military and civilian alike), complete the mandatory training. Leadership across the command needs to apply a little self-preservation risk management here by asking themselves this question: "If I have the unfortunate task to personally brief COMACC on the accidental death of an employee under my command, what possible excuse am I going to offer for not having conducted the mandatory ORM training?"

Moving onto the question of "who" you should work with to correct observed deficiencies — it is situation dependent. You tried in vain to go 1 versus 2 with the laborers in hopes of preventing a pruning accident. Regardless of your success at that level, I would recommend follow-up action with Civil Engineering management in order to address any systemic deficiencies in their tree pruning procedures, and thus avoid future situations like the one you encountered.

But now for the tougher of your three questions; how can ORM influence a change in attitude? First, you need to make it easy for your people to understand. One of the ACC Staff Champions passed this gem along that may help make ORM more "user friendly." He said, "Instead of viewing ORM steps

1 and 2 as 'Identify Hazards' and 'Assess Risk' ... tends to come across as kinda clinical ... try substituting, 'What Could Go Wrong' and 'How Bad Could It Be.'" Second, give them examples that clearly demonstrate how ORM applies to their function in life. Allow me to illustrate this easy-to-comprehend approach with an attitude-changing example that applies to pruning trees — courtesy of a sister service mishap summary.

"WORRRRT!
WORRRRRRTTT!!! TATATATA!
'TIS AUTUMN AND THE VOICE OF THE CHAIN SAW IS HEARD IN THE LAND. THIS FIRST CLASS WAS PRUNING HIS TREE WITH AN ELECTRIC CHAIN SAW WHICH, AS ALL (UHH! UHH! UHH!) REAL MEN KNOW, IS NOT A CHAIN SAW AT ALL. NOPE. S'MORE LIKE SOMETHING YOU MIGHT GIVE YOUR KID FOR CHRISTMAS. KINDA LIKE THE LITTLE BOY'S EQUIVALENT OF ONE OF THOSE EASY-BAKE OVENS. BUT ... IT'S ALL HE HAD.

SO HE TIES THIS BIG LIMB OFF — TO KEEP IT FROM FALLING ON HIS NEIGHBOR'S HOUSE — AND HE'S UP ON HIS LADDER, GRADUALLY CHEWING HIS WAY THROUGH A 10-INCH THICK BRANCH WITH IT WHEN, AT ABOUT THE 9-INCH MARK, THE BRANCH COMMENCED TO SWAY AND PINCHED THE CHAIN SAW TO A HALT. HMMMM ... SO, HE WIGGLES THE SAW FREE, CLIMBS DOWN, REPOSITIONS THE

LADDER, CLIMBS BACK UP, AND RE-ENGAGES THE BRANCH. ONLY THIS TIME, BECAUSE OF WHERE HE HAD TO SET HIS LADDER, HE'S HOLDING THE SAW IN HIS LEFT HAND.

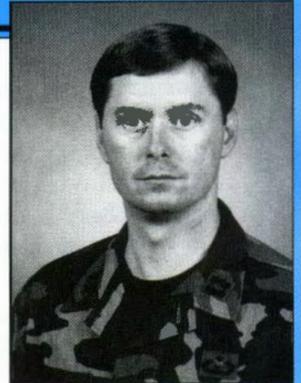
AFTER A WHILE, THE SAW GNAWS ALL THE WAY THROUGH; AND THE BRANCH — WHICH IS TIED OFF, RE-MEMBER — SUDDENLY BEGINS TO SWING ... TOWARD OUR WOODSMAN. WHOA! WELL, HE SEES THIS THING COMING AND JUMPS OFF THE LADDER TO KEEP FROM GETTING KNOCKED ON HIS CAN. BUT, HE'S NOT QUITE FAST ENOUGH, SEE. AND, WHILE HE'S STILL AIRBORNE, THE BRANCH SMACKS THE SAW (DID I MENTION THIS THING IS STILL RUNNING?) AND JAMS IT INTO HIS CHEST WHERE IT SLASHES THROUGH HIS CHEST WALL, TEARS THROUGH AN ARTERY, THEN RIPS UPWARD INTO THE UNDERSIDE OF HIS CHIN!

WAIT A MINUTE! WAIT A MINUTE! YOU AIN'T SEEN NOTHIN' YET! WE LEFT THIS GUY UP IN THE AIR; HE HASN'T LANDED YET! WHUMP! THERE IT IS! GOOD NEWS: HE LANDS ON HIS FEET! BAD NEWS: THE BRANCH IS STILL BEARING DOWN ON HIM AND, AS HE TURNS TO MAKE GOOD THIS NARROWEST OF ESCAPES, HIS LEFT HAND — A LITTLE WEAKER, YOU KNOW, A LITTLE LESS ABLE TO CONTROL THE FLAILING SAW — LETS THAT WHIRLING CHAIN

Monthly Awards

GROUND SAFETY INDIVIDUAL AWARD OF DISTINCTION

*Capt Kyle M. Cornell
9 MUNS, 9 RW
Beale AFB CA*



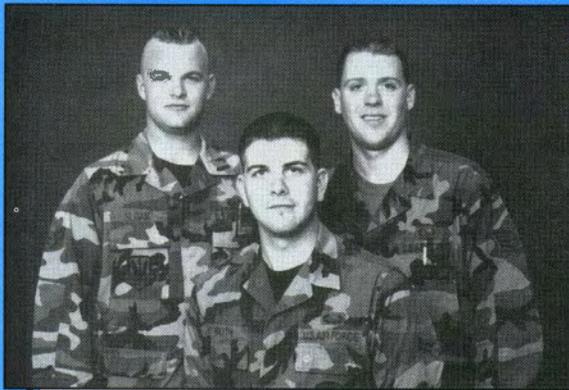
Capt Cornell's unwavering commitment to provide a safe work environment for his munitions personnel resulted in him identifying several flaws in the wing's emergency response procedures for an accident in the Munitions Storage Area (MSA).

He independently initiated an in-depth look into every agency, both on- and off-base, that responds to this type of emergency and discovered several significant deficiencies. He reviewed every emergency response checklist and procedure that these agencies performed during emergencies. He found that the grid maps used by most of the wing command and control emergency response functions were outdated or inaccurate. This was also the case with the maps provided to the off-base ambulance service, which provides key emergency response to the base. He coordinated replacement maps for all on- and off-base agencies.

In addition, he found that the on- and off-base ambulance services were not familiar with the location of the MSA. He offered and performed orientation tours of the MSA for all the ambulance response personnel ensuring quick responses during accidents. He identified and corrected deficiencies in off-base ambulance response by having the Security Forces Squadron emergency response checklists amended to open a back gate, rather than having the ambulance always use the front gate, cutting emergency response time to the flight line and MSA by 15 minutes. He also coordinated to provide the off-base ambulance service with the same radio frequency as that used by the base hospital, improving communications and control during emergency response.

Additionally, he found that the base 911 system has limited capability to transfer an incoming call to the appropriate emergency response agency. For multiple 911 calls, the controller had to pass information from the caller to the emergency agency or have the caller hang up the telephone and redial the needed emergency agency on another telephone line. Because of his finding, a complete audit of the base 911 system was ordered so that improvements in the system could be made. These improvements will allow controllers the ability to transfer calls to the needed emergency agencies, thus improving the emergency response times and command, control, and communication.

Capt Cornell's thorough review of emergency action checklists, disaster grid maps, and control procedures resulted in improvements to the emergency response capability of the Logistics Group, Medical Group, Support Group, and off-base emergency response agencies. His efforts will pave the way for improved interagency training, with both on- and off-base agencies. The exceptional dedication and commitment demonstrated by Capt Cornell make him truly deserving of this award.



FLIGHT LINE SAFETY AWARD OF DISTINCTION

*SSgt Michael D. Powell, A1C Geoffrey A. Roth,
Amn Gregory D. Sloan
4 FS, 388 FW
Hill AFB UT*

On 7 July 1997, a three-man crew consisting of SSgt Powell, A1C Roth, and Amn Sloan initiated End-of-Runway recovery procedures for aircraft 89-2067. SSgt Powell marshaled the aircraft into chocks and Amn Sloan proceeded to check the right wheel for hot brakes; there were no abnormal indications at this time. A1C Roth began safing the aircraft and positioned himself inside of station 7. While Amn Sloan was checking the left wheel, the right inside brakes caught fire. The flames caught the attention of A1C Roth and he immediately signaled SSgt Powell that the aircraft was on fire. A1C Roth and Amn Sloan egressed the area, located a fire extinguisher, and pulled it to the jet. A1C Roth grabbed the hose and ran toward the vicinity of the fire, while Amn Sloan pulled the safety pin and charged the system. SSgt Powell immediately notified the pilot of the aircraft, who in turn declared a ground emergency. SSgt Sloan kept the pilot apprised of the situation. When the fire department arrived, the fire was already extinguished. The aircraft was shut down and the pilot safely egressed the cockpit. Further investigation revealed hydraulic fluid was spilled on the brake stacks during previous servicing of the aircraft. Upon landing, the residual fluid, coupled with the heat of the brakes precipitated a fire. The total cost of repair was \$3630.99. The quick and decisive actions of this crew averted a catastrophic incident and prevented the loss of a multi-million dollar aircraft and valuable Air Force assets.



CREW CHIEF EXCELLENCE AWARD

*SrA Michael Bush
523 FS, 27 FW
Cannon AFB NM*

On 11 Sep 97, SrA Bush was performing a routine engine run on aircraft 86-0303, GE-110 motor. This engine run was required as follow-on maintenance for a jet fuel starter solenoid valve change. Approximately 7 minutes into the engine run, SrA Bush noticed an unusual noise and terminated the engine run. Upon further investigation, he discovered that the engine core did not spin freely. He informed the Production Superintendent that an engine borescope should be performed on the engine. The Production Superintendent agreed and a borescope was accomplished with no additional discrepancies. However, a restrained high power engine run was accomplished to further troubleshoot the engine. During this particular test, SrA Bush experienced the same unusual engine noise and immediately aborted the engine run. SrA Bush had to convince the engine shop that something was wrong and determined that the engine should be removed and given to the engine test cell for vibration tests. Upon further examination, engine specialists found the high pressure turbine retaining ring was loose and there was a major crack in the eighth stage compressor rotor blade. Both items contributed to the unusual engine noise and each was potentially catastrophic. SrA Bush's determination and willingness to find the exact cause of the unusual engine noise may have averted a serious mishap. His dedication, experience, and professionalism saved a valuable resource and greatly enhanced the combat capability of the 27th Fighter Wing.

UNIT SAFETY AWARD OF DISTINCTION

*34th Bomb Squadron
366 WG
Mt Home AFB ID*

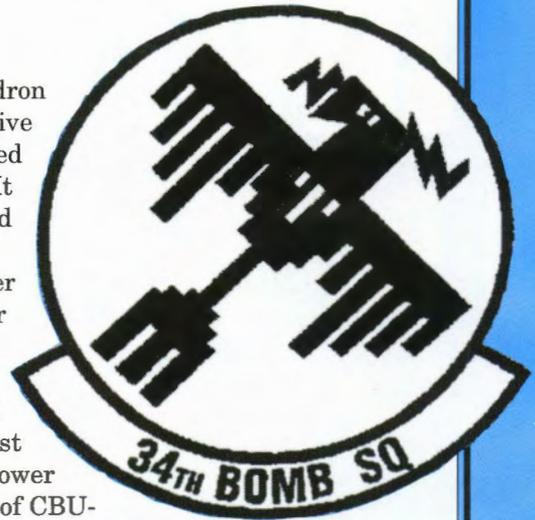
Through superb professionalism and attitude, the 34th Bomb Squadron achieved a superior mishap-free safety record parallel with aggressive mission accomplishments during FY 97. Outstanding teamwork formed the foundation for a mishap-free unit move from Ellsworth AFB to Mt Home AFB while maintaining a vigilant operations tempo which included many high profile deployments.

Steadfast leadership orchestrated the unit's move over the September 1976 to April 1997 time frame, overcoming a high personnel turnover with 46 percent of maintainers on upgrade training, and juggling aircrews merged from three different B-1B bases. October's participation in Dynamic Mix, striking targets in Turkey from a forward operating location of Mildenhall, United Kingdom, marked the first deployment intertwined with the squadron's relocation. A Global Power mission en route to Mildenhall featured the first successful live drop of CBU-87s by an operational B-1B unit. Coronet Radar, a deployment to Moron, Spain, filled January's agenda. This exercise proved the ability of aircrew to perform their own aircraft servicing at a stopover point, due to excellent training from the maintenance team, before recovering into Moron with a minimal logistics package, without air refueling. In late April/early May, the squadron deployed to Alaska for Almagam Warrior, an air defense identification zone penetration exercise, and Cope Thunder, a PACAF realistic combat training exercise. Late May provided the opportunity to launch a Global Power mission to South West Asia to bomb a range in Kuwait and recover into Lajes Field, Portugal. The next deployment, in late July/early August, originated in Lajes Field, Portugal, for the exercise Northern Viking flying Icelandic air defense identification zone penetration missions. This exercise distinguished the 34th as the first B-1B squadron to deploy its entire permanent aircraft assigned with 100 percent mission effectiveness and 86.7 percent mission capability rate. Culminating the year brought the challenge of an air expeditionary force (AEF) tasking joining the 366th Wing deployment to Bahrain in Southwest Asia for Operation SOUTHERN WATCH. These deployment sorties averaged 20 plus flying hours combined with 12-hour maintenance shifts. In between deployments, the 34 BS participated in numerous fly-bys, air shows, (including Golden Air Tattoo, the Air Force 50th Anniversary air show) and composite wing training missions flown in local area ranges.

Inigorated by the high operations tempo, the 34 BS earned an "Outstanding" from 12 AF during the February Standardization/Evaluation Inspection, an "Excellent" during November's ACC Quality Air Force Assessment, and accomplished the first Operational Readiness Inspection in a combat zone in conjunction with the wing's September AEF deployment.

High visibility, perseverance, and dedication provided the catalysts for the successful past year. A challenging year without High Accident Potentials, hard foreign object damage incidents (complicated by on-going flight line construction), or Hazardous Air Traffic Reports proved the squadron's safety program's success. The 34th Bomb Squadron implemented and integrated Operational Risk Management (ORM) in all flying operations and maintenance. Risk assessments, completed for all deployments and reviewed by all squadron members involved, identified high risk areas and provided control measures to make all deployments as low risk as possible. ORM worksheets for every higher-than-normal risk sortie ensured critical communication among the aircrews and leadership. Training 100 percent of squadron members guaranteed safety awareness in everyday squadron life, and new squadron member training as part of the inbrief program solidified safety's importance.

The 34th Bomb Squadron's true professionalism and superb safety attitude accomplished a truly exceptional safety record. Demanding taskings and a high operations tempo only increased vigilance and demonstrated an exuberant pursuit of excellence in safety, thus setting the standard in the 366th Wing.



Chaplain Thomas P. Azar, Major, USAF
AFIT Student, Marquette University
Milwaukee WI

Morale Begins

Blue suiters have commitments throughout all the hemispheres of the world and in all seasons of the year. The downsizing of our military forces coupled with the high operations tempo created by numerous regional conflicts have resulted in unprecedented levels of increased stress upon deployed military personnel.

Holiday deployments either help reblue or unglue an individual's mental and emotional states of being. Fighter, support, and maintenance squadrons are presently being deployed on a regular basis to overseas locations in support of contingency operations. The resulting separation from family and friends has the potential to bring about loneliness for many airmen — especially during the Thanksgiving, Christmas, and New Year holiday time period. When deployed, as airmen focus their thoughts on how lonely, desolate, and isolated they feel during this time of year, job safety can be affected. If military personnel are unable to concentrate on their role in the mission at hand,

they are not as effective or safety conscious as they need to be.

Loneliness, especially during the holiday season, impacts the individual, their family, and can influence mission safety as well. A great amount of loneliness stems from a lack of family as well as professional support. Individuals on deployment are separated from their families, old friends, and have not had sufficient time to initiate new relationships. They also often experience poor communication with home and with their co-workers. This dissatisfaction with one's own personal and professional relationships compounds distress. Rather than plugging in to their newly established environment, they are unconsciously pulling out. I am convinced that no matter what face an individual wears on the outside, underneath there can be some hurt and pain. It takes strength of character for an individual to face up to loneliness, acknowledge it, and try to do something positive about it.

How does local leadership, as well as at the Air Force

level, maintain a framework of support to counter the onset of immediate and extended loneliness? How can they assist deployed personnel in maintaining a focus on safety, readiness, and worldwide mission accomplishment? Loneliness is not simply overcome by being around lots of people. It is a state of mind about how you feel about yourself when interacting with others. The base chapel provides excellent opportunities for involvement and guidance for the many airmen who come by because they are lonely. They need and are seeking fellowship. The chapel is not just a museum of happy saints; in reality, it is a hospital for the hurting. Lonely people are silent sufferers, and usually they keep their thoughts and feelings hidden. Loneliness affects our physical as well as mental state of being. We lose our enthusiasm, feel fatigued, and withdraw from social activities. Self-sufficiency and independence are often applauded by society at large, but ultimately they can result in loneliness. Individuals are so busy looking out

with One

Holiday deployments either help reblue or unglue an individual's mental and emotional states of being.

for themselves that they fail to share their true feelings and neglect making themselves available to help others. It is this lack of purpose and support that leads a lonely person to become despondent. Involvement in chapel outreach programs provides a personal sense of direction, self-satisfaction, and accomplishment.

Base chapel organizations also have a good support structure for spouses. Many come to meetings at the base chapel while their spouse is deployed. They have been left with the rather awesome responsibility of having to take care of all the regular day-to-day activities for the family. It's very true that loneliness not only touches the heart of the deployed member's spouse, but their entire family as well — to include children of all ages. In addition there are many who are lonely and hurting because of divorce, death of a spouse, or other personal problems in their lives. With assistance and guidance from a chaplain, people in all different types of situations

have been helped in identifying and overcoming their loneliness.

Loneliness may increase in a person's life because of difficulties in overcoming past feelings. The mind flashes back to the past and struggles to hold down the erupting memories. This creates distance and distrust within other relationships, and the unresolved "luggage" from the past fuels self-pity. Quick attempts to create new bridges often meet with suspicion and thus only inflames the loneliness. If the person continues to withdraw from his or her friends, the individual over time could end up in a desperate condition — and become a hazard to himself as well as others in the workplace. Therefore, if someone is too ashamed or reluctant to ask for help, then a good friend or caring supervisor needs to step in and offer their assistance.

Loneliness can be a choice. During the holidays, many squadrons provide opportunities for home and deployed personnel to socialize. It is the individual's responsibility to seek out healthy relationships

with others. Challenge your limitations. If you are TDY, realize where you are; and don't expect what can't be provided. Forward base commanders strive to make the holiday separation as painless as possible with the resources available. Try to seek a reasonable balance; don't drown yourself in self-pity or participate in too many socials. Being alone is not the same as being lonely. Look at your situation and separate the two. Use your time wisely — read good books, watch classic films, join in recreational events and chapel activities.

Loneliness is often a temporary stage; try to develop new outlets for dealing with it. Sports and squadron events are usually very helpful. While deployed, visit your base chapel and get involved. There are plenty of programs that need volunteers; and in serving others, we actually heal ourselves. As you reach out a helping hand to others this holiday season, you'll not only feel happier, you'll be a more effective and safer airman on the job, as well. Remember, your morale begins with one; it begins with YOU! ■

ACCOLADES

QUESTIONS OR COMMENTS
CONCERNING DATA ON THIS
PAGE SHOULD BE
ADDRESSED TO HQ ACC/SEF,
MAJ "E.T." MOORE
DSN: 574-8816

	TOTAL			ACC			CANG			CAFR		
	OCT	THRU OCT		OCT	THRU OCT		OCT	THRU OCT		OCT	THRU OCT	
		FY98	FY97		FY98	FY97		FY98	FY97		FY98	FY97
CLASS A MISHAPS	0	0	0	0	0	0	0	0	0	0	0	0
AIRCREW FATALITIES	0	0	0	0	0	0	0	0	0	0	0	0
* IN THE ENVELOPE EJECTIONS	0	0	0	0	0	0	0	0	0	0	0	0
* OUT OF ENVELOPE EJECTIONS	0	0	0	0	0	0	0	0	0	0	0	0

* (SUCCESSFUL/UNSUCCESSFUL)

CLASS A MISHAP COMPARISON RATE

(CUMULATIVE RATE BASED ON ACCIDENTS PER 100,000 FLYING HOURS)

ACC	FY 97	0	0	0	0.6	1.0	0.8	1.6	2.1	2.1	2.3	2.2	2.6
	FY 98	0											
8 AF	FY 97	0	0	0	0	0	0	0	1.2	1.1	1.0	0.9	1.6
	FY 98	0											
9 AF	FY 97	0	0	0	1.7	1.4	1.1	2.9	2.5	2.3	2.7	2.5	2.3
	FY 98	0											
12 AF	FY 97	0	0	0	0	0	0	1.0	1.7	1.5	2.0	1.8	2.3
	FY 98	0											
DRU	FY 97	0	0	0	0	5.7	4.7	4.0	3.5	6.4	5.8	5.3	4.9
	FY 98	0											
CANG	FY 97	0	3.8	2.6	3.3	2.7	3.0	2.6	2.2	2.0	2.2	2.0	2.2
	FY 98	0											
CAFR	FY 97	0	6.3	4.2	3.1	5.2	6.1	5.3	4.7	4.2	4.1	4.0	3.9
	FY 98	0											
TOTAL	FY 97	0	1.9	1.3	1.7	1.9	2.0	2.3	2.4	2.4	2.5	2.3	2.4
	FY 98	0											
MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

HONOR ROLL

Units without a "Command-Controlled"
Class A flight mishap since the
stand-up of ACC on 1 Jun 92, or their
respective assimilation into the command.

5 BW	119 FW	174 FW
24 WG	120 FW	175 FW
55 WG	122 FW	181 FW
79 TEG	124 FW	184 BW
85 GP	125 FW	185 FW
93 ACW	129 RQW	187 FW
102 FW	132 FW	301 FW
103 FW	138 FW	419 FW
104 FW	142 FW	442 FW
106 RQW	147 FW	509 BW
113 WG	150 FW	552 ACW
114 FW	156 FW	926 FW
116 BW	169 FW	939 RQW

As of 31 Oct 97

ORM for Wildlife Hazards

Major Tom "Duck" Donalds
HQ ACC/SEF
Langley AFB VA

A BASH program is a form of Risk Management that ACC units have been using for years. By applying the six-step ORM process to the existing program, units can further reduce airfield wildlife hazards while maximizing mission success.

The AWACS crash at Elmendorf AFB in September of 1995 was a tragic reminder of the importance of airfield bird control. Since that mishap, numerous agencies have taken countless steps to reduce airfield bird hazards. Although well intentioned, some of these steps have actually increased rather than decreased the risk. By using risk management techniques and the six-step process, units can streamline their efforts and minimize airfield wildlife hazards while limiting the impact on flightline operations.

Before jumping into step one, it is important to ensure all the right people are involved in the process. The Bird Hazard Working Group (BHWG) is the best place to start. Determine if the whole BHWG needs to be involved in the entire process or if another smaller working group should be formed. Often times a lower level working group

will have more time to discuss in-depth details, and make recommendations to the BHWG. A couple of ACC bases have established an "Airfield Wildlife Hazard Working Group" with great success. The following list suggests members for this working group:

Wing Flight Safety
Tower Watch Supervisor
Airfield Manager
Tower Ground Controller
CE Natural Resource Advisor
Bird Harassment Team
CE Grounds Maintenance
SOF Program Manager
CE Pest Control
Base Beautification Manager
Golf Course Manager

STEP 1. IDENTIFY THE HAZARDS: After determining who needs to be involved in the process, the first step is to identify the potential sources of danger which cause risk. There are several

places to look to identify bird and wildlife hazards. Hazard identification should be as specific as possible. The more specific and accurately the hazards are defined, the less restrictive the control measures need to be to reduce risk to an equivalent level.

a. Analyze data from birdstrikes that occurred on or near the airfield for the last couple of years. Are there any observable trends — by species, month, time of day, etc.? The Air Force BASH Team maintains a database containing much of this information which can be sorted in a variety of ways. If accurate information has been reported to the BASH team for local birdstrikes, the database can be very helpful. If a local database is kept, it also may have valuable information.

b. Inspect other local records. Determine when the Bird Watch Condition (BWC) has been raised to moderate and severe over the

last 2 years. Does Airfield Management keep records of bird and other wildlife activity on the airfield? Are there any trends? For example, do deer take refuge from hunters during the hunting season by moving onto the base where they are relatively safe? Does Civil Engineering (CE) keep bird count records? Do the minutes of the BHWG for the last couple of years reveal any trends?

c. Examine the Bird Avoidance Model (BAM). What hazards are identified on low level routes near the airfield? How do these correspond to actual birdstrikes or sightings?

d. Local environmental groups and hunt clubs provide another source of wildlife information. Bird watchers have internet sites to tell each other when and where to go to see certain species of birds. This information can often be used to identify migratory stopover points or other hazards. Local hunt clubs may know where waterfowl stop in the local area during migratory seasons, or when and where deer may encroach on the base. Universities, state fish and game offices, the Audubon Society, and the U.S. Department of Agriculture can also be contacted to obtain wildlife information.

e. What is on or around the airfield that is attracting birds? Are there landfills, dumps, or sewage lagoons on or near the airfield? Are base lands used to outlease crops? Are these or other areas on base — such as ponds, the golf course, horse stables, or recreation areas — attracting birds? Does the air-

field drain well, or is there ponding and standing water present? Are there wetlands on or near the base that attract birds? Is vegetation on base attracting birds? Do birds follow the tractors mowing the airfield? Are birds seen standing on runways and taxiways after heavy rain? Are there old antennas or other unused vertical obstacles on the airfield that birds



are using as perches? Asking these questions to people who work on the flight line may reveal important information.

f. What other potentially hazardous wildlife is on the airfield? Is there evidence of deer digging under airfield perimeter fences? Are there coyote droppings on the sides of taxiways? Have rabbits or foxes been observed on the airfield?

STEP 2. ASSESS THE RISKS:

The next step is to assess the risk and determine which of the identified hazards present the greatest risk. Consider the potential outcomes, their probability, and severity.

a. Determine what species of birds are present that may cause a mishap. Small birds are generally only a hazard if they are a flocking

species. Starlings, for example, can be very hazardous because they fly in such tight formations. Swifts and swallows usually fly individually — which by themselves will usually only leave a blood smear. In general, there are only about 12 species of birds commonly found in the U.S. that are large enough to bring down a jet from a single strike. Gulls are the most common bird struck on airfields and are often found in large numbers.

b. Consider what type of aircraft are being operated. The vulnerability of a particular aircraft to bird damage is determined by several factors including the number of engines, the engine's bypass ratio, the thrust-to-weight ratio, composite materials, and speed in the traffic pattern. Off-station aircraft may be more susceptible to birdstrikes than local aircraft and may need to be handled differently.

STEP 3. ANALYZE RISK CONTROL MEASURES:

Determine what controls can be implemented to counter the assessed risk. There are both active and passive measures available. AFPAM 91-212,

“Bird Aircraft Strike Hazard (BASH) Management Techniques,” has excellent information concerning these measures and expands upon the discussion below.

a. Passive measures are long-term in nature and involve managing the airdrome to eliminate those factors that attract wildlife. These measures are the most effective and should be taken before money is invested in expensive active control measures. Examples of passive techniques are maintaining airfield grass between 7 and 14 inches high, ensuring the airfield drains well, and standing water is eliminated.

b. Active measures involve causing birds to disperse from an airfield to give short-term relief from an immediate safety hazard. One example is removing local geese and ducks from base lakes. Use of pyrotechnics, bioacoustics, depredation, propane gas cannons, dogs, and falconry are also examples of active control measures.

c. If a serious problem exists that cannot be addressed with on-base expertise, the best option may be to contract a civilian bird control expert. RAF Mildenhall and Lakenheath both have bird control contracts, and their airfield BASH reduction is better than any observed in ACC. ACC/SEF has information and points of contact for units considering this option.

d. If birds cannot be effectively removed, look at schedule modifications to avoid peak bird times. Takeoffs and landings within an hour of sunset may be more hazardous. Many species of birds migrate at night. If these species are common in the local area, avoid scheduling night flying during the peak migratory seasons of local species.

e. Highlight known hazards. Review Flight Information Publication (FLIP) Area Planning for your

airfield; bird hazard information should be very specific so preventative actions can be taken. A statement that there are a lot more birds between 1 Sep and 1 Nov is almost worthless. Here is an example of a better input: “large bird populations are common within an hour of sunset from 15 Sep to 15 Oct. During this time, multiple approaches may be limited and aircrew should plan to arrive with fuel for 15 minutes of holding if birds are being dispersed.” Publish a Notice to Airmen (NOTAM) if hazardous bird conditions develop unexpectedly. A recurring NOTAM published for an entire migratory season desensitizes aircrew to specific hazards and should be avoided.

f. An active Supervisor Of Flying (SOF) is critical to controlling airfield wildlife hazards. SOFs should be trained to identify when and where wildlife hazards are commonly found and what traffic pattern restrictions should be implemented to mitigate the associated risks. It is the SOF’s responsibility to determine whether the importance of a mission outweighs the potential risk associated with wildlife or any other hazards.

STEP 4. MAKE CONTROL DECISIONS: Determine which courses of action will best accomplish the mission with an acceptable level of risk.

a. Here is where the tough decisions need to be made. Somewhere between stopping flying and ignoring bird/wildlife hazards lies the best solution for each unit. Manpower resources need to be analyzed to determine what should be done and in what order.

b. The impact of the restrictions on training must be considered.

c. The results of this risk assess-

ment should be incorporated into the long-range scheduling plan. Bird and wildlife hazards should be considered when determining flying windows and night flying.

STEP 5. RISK CONTROL IMPLEMENTATION: Implement the controls and the courses of action decided on in the previous step.

a. Risk controls need to be directive in nature and should be coordinated with the Bird Hazard Working Group.

STEP 6. SUPERVISE AND REVIEW: Monitor the operation for effectiveness of the controls and changes. Correct ineffective controls and begin the ORM process again as further changes occur.

a. Review step one and see where hazard identification could be enhanced. Are SOF’s, tower personnel, and airfield managers trained to look for wildlife hazards with the necessary level of detail? Do members of the Base Beautification Committee know what types of vegetation will attract a black-bird roost to the airfield? Would species identification be easier for the Airfield Manager if he had a bird identification book?

A BASH program is a form of Risk Management that ACC units have been using for years. By applying the six-step ORM process to the existing program, units can further reduce airfield wildlife hazards while maximizing mission success. Remember, our goal is to preserve combat capability through aggressive mishap prevention. The key to the success of the BASH program is getting every member of every unit involved in identifying and helping to eliminate the factors that add unnecessary risks to our operations. Only you can make the difference — our mission depends on it! ■

"Why" Another DUI?

Major David Conley
65 ABW/SE
Lajes Field, Azores



In all my years in the service, I can't stop asking myself, "Why, why, why, why?" every time a base experiences a DUI incident. Recently, we experienced another DUI — the third time in a row we've had one within 3 weeks of a DUI down day. Don't misunderstand me. We shouldn't need a down day as incentive to not break the law. We shouldn't need a reward to entice us into doing something that could very well save a life — quite possibly our own. We should, however, wonder "why" it continues to happen.

Why did this person drink and drive in the first place? It's certainly not because he or she was never exposed to articles, TV spots, or radio advertisements telling them it was unsafe. We've all heard enough of these pieces to write a book.

Why didn't they call a cab? Was

it too expensive? Trust me; a \$10 cab fare is a lot cheaper than a DUI conviction — not just monetarily either. A DUI is a stigma that remains long after the hangover has worn off. It puts a question mark next to a person's integrity, their maturity, their values, and their common sense. Why didn't they call a friend, their supervisor, or their first sergeant? Too embarrassed? Listen — I've talked to many first sergeants. Given the choice between having a late-night conversation with someone who slurs badly, or getting called by the police station to drag an intoxicated airman out of the slammer (or even the hospital emergency room) and trying to answer the commander the next day as to why it happened — well, there's not much of a contest. You may get

over the embarrassment of being drunk, but will you ever get over the guilt of killing someone?

Why didn't they listen? We have all the information needed to make a smart choice, and we have a series of steps available to us in order to prevent DUIs from happening. If you see someone go to a car and know they've been drinking — stop them! Take their keys, and give them a ride home. Call a cab or their first sergeant for them.

Be a true friend, and don't allow them to drive their vehicle in a drunken stupor. If you let them climb behind a steering wheel, they are likely to be only minutes away from killing themselves or someone else. If we don't do something to help others at a time like this, we may find ourselves standing next to them (or one of our loved ones) stretched out on a hospital bed — or even worse, over their grave — asking, "Why, why, why, why?" ■



TEAM SALUTES

The HQ ACC TEAM SALUTE recognizes a person, group of people, or unit for notable displays of quality performance in the area of mishap prevention. Recipients are selected by the ACC Safety Awards Board from the monthly nominees for ACC safety awards and are featured periodically in *The Combat Edge* magazine. Our congratulations to these superior performers.

*A1C Bryan M. Broom
57 AGS, 57 WG
Nellis AFB NV*

On 7 Apr 97, at approximately 1630 hours, A1C Broom was walking to work at Viper Aircraft Maintenance Flight (AMF). His daily walk takes him past building 890, the military gas station. As he approached the gas station, he detected a distinct gaseous smell in the area. Quickly assessing the situation as a possible gas leak in the Compressed Gas (CG) lines, he knew he had to act. Running the remaining distance to Viper AMF, he immediately contacted the Nellis AFB Fire Department. Emergency personnel were dispatched to the site of the leak. The entire system had to be shut down in order to safe the area to allow base civil engineers to troubleshoot the problem. Engineers deter-

mined that an "O" ring had failed in the control ring of the CG dispenser. Nellis AFB Fuel Operations Superintendent, SMSgt Mayabb, was quoted as saying, "A1C Broom's ability to recognize the seriousness of the situation prevented a possible catastrophic explosion" and later said that "by doing so, prevented the loss of millions of dollars in equipment and possibly even human life." When questioned later, A1C Broom said, "I knew I had to do something before the problem escalated into a much more serious situation." Individuals such as A1C Broom are the backbone of today's Air Force, unselfishly serving day-to-day, and as witnessed here. ■

*SrA David M. Novak,
SrA Damian C. Barnhardt,
A1C Christopher S. Koopmans
4 FS/388 OSS, 388 FW
Hill AFB UT*

On 5 May 1997, SrA Novak, A1C Roth, and A1C Koopmans were performing monthly proficiency loads in the weapons load training facility. At approximately 2230 hours, a metals technology specialist began to perform maintenance on an adjacent aircraft located in the hangar. A weapons evaluator attempted to start an MC-2A air compressor for the specialist. On start up, the air compressor began to smoke; it was immediately shut down and pushed outside the hangar by SrA Novak and A1C Koopmans. The crew continued to observe the compressor and ensure another incident was not forthcoming. Satisfied that all was well, the

weapons load crew continued with their training. During the ensuing load, SrA Novak went outside to start the A/M32A-60 generator set and noticed the air compressor smoking again. As he approached the compressor, it burst into flames. Instinctively, he looked for a fire bottle to extinguish the fire. Seeing there was no fire bottle, he ran inside to inform his crew of the occurrence and initiated fire fighting procedures. SrA Barnhardt, training evaluator, and A1C Koopmans grabbed a fire bottle, pulled it outside, and proceeded to extinguish the flames. The fire department, Maintenance Operations Center, and Quality Assurance were notified of the incident. Further investigation revealed the source of the ignition was a faulty voltage regulator. The awareness and quick reactions of the individuals involved significantly reduced the damage to the compressor and avoided a potentially hazardous situation from occurring. ■

*Mr. Harold R. Doyle
366 CES, 366 WG
Mt Home AFB ID*

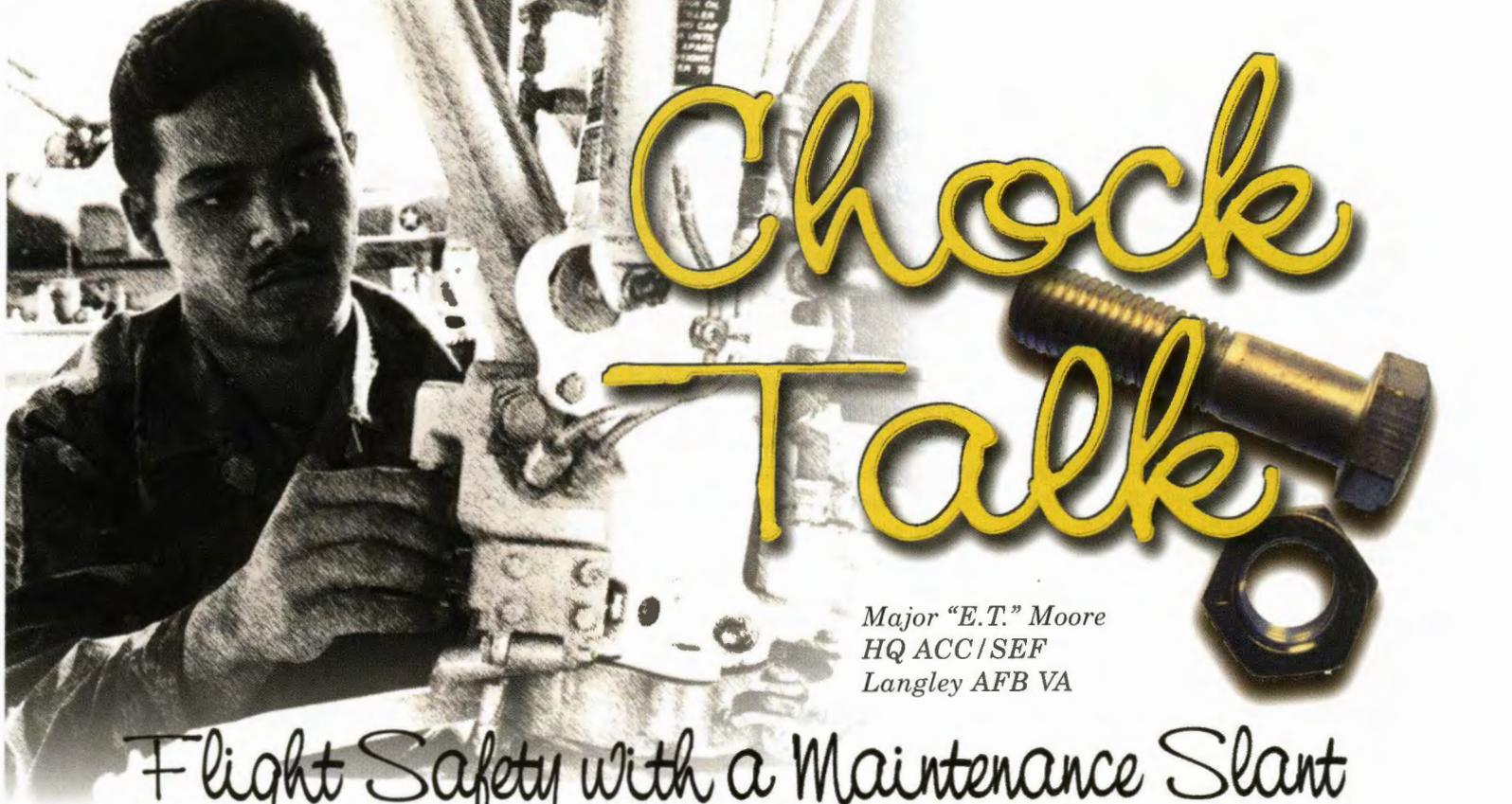
On 16 May 1997, at approximately 0830, a Bowman construction worker in dormitory 2425 broke a high temperature, high pressure, hot water line in the building boiler room. Mr. Doyle witnessed the vent and quickly called 911 to report the accident. One of the bowman workers was trapped in the room with a jet of heated steam blocking his escape. A fellow worker covered himself and entered the boiler room. Unable to see or find his co-worker, he departed the room. The trapped worker saw him exit and followed his lead out of the room. Mr. Doyle immediately returned to the scene and directed the workers to get the

injured man to the nearby water hose and to cool down his burned skin. Minutes later, the ambulance and proper authorities arrived. The injured worker received burns to his upper torso. He was treated and released from the base hospital the same day. It is apparent that Mr. Doyle's quick action to call emergency response vehicles, knowledge of the self-aid buddy care, and fast thinking in this critical situation, saved the worker from serious burns and further damage to the dormitory facility. ■

*Capt Randolph K. Barker,
Capt Russell K. Armstrong,
Capt Darren R. Schwede,
SSgt Roby G. Kaufman
963 AACCS, 552 ACW
Tinker AFB OK*

While on station during a routine counter drug sortie, the crew of Comma 01 experienced the loss of their #2 generator with no other malfunction indications. The flight engineer (FE) immediately began troubleshooting the problem. Approximately 10 minutes later, the #1 engine oil pressure light illuminated. The #1 engine oil pressure and temperature indicators read zero. The #1 engine N2 also read 10%. The aircraft commander (AC) called for the Engine Failure/Fire checklist. While in the process of shutting down the #1 engine, the AC noted binding in the #1 throttle. Also, the fire warning system illuminated for the #1 engine as the crew elected to shut down the engine using the fire switch. The crew quickly completed the shutdown sequence and activated the fire extinguisher. Attention to detail and flawless crew coordination quickly extinguished the fire. Notable is the non-typical engine fire indications and the ease and professionalism with which the crew

dealt with the situation. With the #1 engine now secured and shut down, the throttle was moved to cutoff with no further binding. After completing checklist items, the crew's attention turned toward recovery to Howard AFB. While avoiding several large thunderstorms en route to Howard, Comma 01 was unable to contact pilot to metro due to ground radio maintenance problems. By delaying power down of mission communication equipment, SATCOM was utilized to provide current weather through the SOF. With the weather at minimums, Comma 01 prepared to adjust gross weight. Having no direct radio contact to the weather shop, the AC elected to monitor tower frequency to get the latest observations. Upon hearing a C-130 go missed approach due to low ceiling and extremely poor visibility due to heavy rain, the AC elected not to dump gas until tower advised of better conditions or divert fuel was reached. Several minutes later, tower advised Comma 01 the ceiling was lifting but wasn't expected to last long. Again, a sharp, alert crew applied flawless procedures to dump gas and commence the approach in heavy rain and under less than desirable conditions, for even a healthy aircraft let alone for a three-engine approach and landing. The Precision Approach Radar was flown with no deviations to an uneventful landing. Inspection of the #1 engine upon landing revealed the #2 integrated drive generator had disintegrated, damaging wiring, binding the throttle cable, and melting portions of the engine cowling. The superior system knowledge, crew coordination, and demonstrated calm in a pressure filled situation were directly responsible for the safe recovery of a national asset. ■



Chock Talk

Major "E.T." Moore
HQ ACC/SEF
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Flight Safety with a Maintenance Slant

Oil: The Lifeblood of an Engine

As professional aircraft maintainers, we are all aware of the importance of maintaining the lubrication systems of our multi-million dollar aircraft engines. We know just how critical

a role oil plays in lubricating and cooling parts that are rotating thousands of times a minute with tolerances measured in thousandths of an inch. Our aircrews rely on us to ad-

equately maintain these vital systems. Although not an Air Force aviator, I do fly general aviation aircraft. I have shared with others my appreciation for the role oil plays in my aircraft's engine by stating, "If I could only have one engine performance indicator in my cockpit, it would be the oil pressure gauge." As such, I've decided to dedicate this month's *Chock Talk* to the care and feeding of aircraft engine lubrication systems. To get the point across the best way a safety guy knows how, I'll highlight a couple of mishaps where oil system malfunctions caused the loss — or near loss — of an aircraft.

Burnt Oil

The mishap aircraft (MA) took off for a routine training mission. About a half-hour into the sortie, the pilot experienced



engine vibrations, followed shortly thereafter by a loud explosion. Fire lights followed, and the pilot successfully ejected.

In this particular mishap, it turns out one of the MA's engines failed due to an oil system malfunction. More importantly, we learned that the mishap engine was "sick" for some time and "crying out" for attention from anyone who would listen. As a matter of fact, the day prior to the mishap, the aircraft was held down due to an unusual smell from the engine and an excessively dark oil sample. So far, so good! When in doubt as to the maintenance integrity of an aircraft, hold it down! So what went wrong? Why was the aircraft released to fly? Unfortunately, the technical data governing the dark oil criteria was misinterpreted, and the aircraft was released for flight. Then, on the sortie prior to the mishap, this same engine consumed oil in excess of technical data limitations. However, the aircraft's crew chief and maintenance supervision failed to notice this abnormal consumption rate ... on an engine that provided symptoms that it was sick and required careful watching. The very next sortie was the mishap sortie.

The engine catastrophically failed due to a failed number 5 bearing. A telltale sign of the impending failure of a number 5 bearing on this particular engine is darker than normal oil. (This condition used to be called "black oil," but it is now referred to as "burnt oil" for clarity reasons.)

The bottom line on this mis-

hap is that a skilled technician failed to notice that the mishap engine exceeded oil consumption limitations during the sortie prior to the mishap. Additionally, flightline supervision failed to ensure that the technician followed the servicing job guide detailing oil consumption limits and troubleshooting guidance. Had any flightline supervisors noticed the out-of-limit oil consumption and followed appropriate technical data, this mishap would have been prevented. It's been my experience that our multi-million dollar aircraft tend to tell us when they are sick ... this jet did, but we ignored its symptoms.

No Oil

Okay. We've talked about what can happen when oil consumption rates are not watched closely or when the source of burnt oil is not sufficiently investigated ... so here is an easy one. What is the result of operating a jet engine with no oil? "What a dumb question ... nobody would ever do something like that ... not on my flightline!" These are the very words I used when I read this one. Well, here it is.

After the jet engine was received from depot, the mishap workers (8 of 'em) installed the engine in the aircraft. A ground maintenance run was performed, and the engine seized shortly after start-up due to oil starvation. You see, for some reason, no one thought about servicing the engine with oil prior to the engine run. Obviously, the oil level also wasn't checked prior to the start as re-

quired by the checklist. Initial damage estimates were at well over \$400,000. The result — one less motor on the spare line at the unit.

Famous Last Words

These incidents speak for themselves. We know what went wrong, and we know both of these mishaps were preventable. I'll close this month with a list of some last words we in the maintenance business tend to hear just before a mishap:

"I don't need the tech data ... I know how to do it."

"There's a quicker way to do that."

"I can do this job with my eyes closed."

"We've always done it this way."

"I never take my wedding ring off."

"You don't need to turn the power off if you know what you're doing."

"Tech data is nothing more than general guidance."

Let's keep these phrases off of our flightline and out of our shops. ■

"Not a single sortie we fly is worth compromising the integrity of an aircraft or the life of an airman."

1997 Survey Results

"Make The Combat Edge bigger. I know it's a magazine and not a novel; but as soon as I am into it, it's over."

In our August 1997 issue, we asked you to participate in a survey so we could measure how well we're meeting your needs as a customer. We need your inputs to improve *The Combat Edge* and better serve you. To all the people who took the time to send us their opinions, THANK YOU. We enjoyed reading your thoughts (yes, we read every survey) and appreciate your honesty.

Applicable portions of the survey have been reprinted along with your response. For questions 1-3 and 9, the numerical entries are percentages (i.e., 65 percent of our survey respondents read the magazine very often, 35 percent - often, etc.) The responses listed for questions 4-8 are numerical averages and reflect how well we rated on the scales included in the survey. Remember, for questions 4-8, high numbers are good. We will continue to analyze the data and use the results in planning future issues of *The Combat Edge*.

Overall, we interpreted the data to indicate that *The Combat Edge* has been fairly successful in fulfilling its charter. Our goal is to prevent mishaps by providing accurate and useful information concerning flight, ground, and weapons safety. The magazine staff is committed to improving our product for you — the customer. We intend on doing just that, based on your responses.

Again, thanks to everyone who filled out a survey and now ... how about an article? You can help make *The Combat Edge* better and correct the shortfalls you identified by sharing your experiences and expertise with your fellow readers. We are completely dependent on YOUR articles.

The Staff of The Combat Edge

1. How often do you read *The Combat Edge*?
 - a. Very often (every issue) - 65%
 - b. Often (most issues) - 35%
 - c. Sometimes (some issues) - 0%
 - d. Seldom (very few issues) - 0%
2. How do you normally obtain this magazine?
 - a. Official USAF distribution (PDO) - 65%
 - b. GPO subscription through direct mail - 20%
 - c. Library - 0%
 - d. Co-worker, associate, friend - 10%
 - e. Other - 5%
3. How much of this magazine do you read?
 - a. All - 30%
 - b. Most - 60%
 - c. Some - 10%
 - d. A little - 0%
 - e. None - 0%

We are interested in your assessment of *The Combat Edge* magazine. When choosing an answer, write in the number corresponding to the extent you agree or disagree with each statement.

Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
1	2	3	4	5

- 4. *The Combat Edge* articles are informative. - 4.5
- 5. *The Combat Edge* articles are interesting. - 4.6
- 6. *The Combat Edge* magazine is useful to me personally. - 4.0
- 7. *The Combat Edge* is an effective mishap prevention tool. - 4.1

8. For the areas listed below, please rate each using the following scale:

Poor	Fair	Satisfactory	Good	Excellent
1	2	3	4	5

- | | |
|-----------------------------------|--|
| Quality of magazine covers - 4.7 | Variety of articles - 4.2 |
| Graphics, layout and design - 4.7 | Award write-ups - 4.4 |
| Article quality - 4.4 | Overall attractiveness of magazine - 4.7 |
| Photographs - 4.5 | Contribution to safety education - 4.4 |

9. How would you rate *The Combat Edge* in comparison with other DoD safety publications? (i.e., Flying Safety, Road & Rec, Mobility Forum, Approach, Torch, Focus, etc.)

- a. The best - 25%
- b. Better than most - 60%
- c. Average - 5%
- d. Worse than most - 0%
- e. The worst - 5%
- f. No opinion - 5%

Survey Comments from our Readers:

- "To improve readership, Keep it Simple ... with flashy photos, graphics, and one page articles."
- "I really like the 'Ask Orville!' series and the monthly awards sections. It's nice to read about folks from afar and their accomplishments."
- Regarding *The Combat Edge*, "I like it as is."
- Print more articles with "personal experiences, exciting careers, and safety successes."
- "Have Fleagle explain the more technical articles (in a cartoon manner) so that medical/administrative/logistical/non-flyer-types can better understand the technicality of flying articles."
- Print "more ground safety articles tailored to communications electronics — they're very hard to find."
- *The Combat Edge* is "a really great magazine with good real life stories — both informative and entertaining. Lots of the messages really hit home."
- "Some articles are a little wordy and don't get to the point soon enough."
- "Continue [to print stories about] personal experiences — "been there, done that."
- Print "a bit less info on the award winners, but don't delete them. It's like reading the citation at a commander's call. Be more brief and to the point."
- Print "more AIRCRAFT pictures."
- Print "more Chock Talk" and "pilot heroics" articles.
- "Make *The Combat Edge* bigger. I know it's a magazine and not a novel; but as soon as I am into it, it's over."
- "I enjoy and absorb as much information ... from *The Combat Edge* as pertains to aviation, aviation safety, risk management ... P.S. - The cartoons are good."
- "It's great!"

Thank You!

*SMSgt Ron Ross
9 AF/SEG
Shaw AFB SC*

A Word to

Seat belts save lives, but they must be worn correctly. In many vehicle crashes, the occupants have room to survive if they are properly secured.



the Wise

One of the more interesting aspects of my job as a safety professional is quite often a bit on the morbid side — investigating accidents. It's a challenge to find out exactly what the cause was and how the accidents could have been prevented. The sad part is that all the fatalities I have investigated would never have occurred had someone taken the necessary safety precautions. Most of the fatalities that I've had the unfortunate experience to investigate were due to traffic accidents.

On one occasion, two young airmen had rented a vehicle for a weekend trip and were returning to base after visiting some relatives in a neighboring state. While negotiating a highway curve at excessive speed, the driver lost control of the vehicle causing the rear of the vehicle to directly strike a rock-solid mountain embankment. Both the operator and passenger were wearing the new automatic shoulder harness seat belts, but had failed to secure the lap belts. The high-impact collision caused both members to be ejected from the vehicle. As they were ejected, they were thrown onto the roadway and witnesses stated they were inadvertently run over by passing motorists. Further investigation revealed the accident

vehicle's interior was intact. Detailed interviews with relatives revealed the members were in hurry to return the rented vehicle in order to avoid being charged for another day. The following lessons learned can be gleaned from this mishap.

Lesson Learned #1: Speed kills. Drive according to the speed limit and road conditions.

Lesson Learned #2: Seat belts save lives, but they must be worn correctly. In many vehicle crashes, the occupants have room to survive if they are properly secured.

Lesson Learned #3: Don't draw a false sense of security from the automatic shoulder harness seat belt system. Secure the lap belt, and reap the full benefits of the entire personal protective system.

In another investigation, an airman had consumed a large amount of alcohol prior to consuming a large meal at a bar. After the meal, he staggered to his car, walking past numerous so-called friends, and attempted to drive himself home — some 5 miles away. While turning on a curve on a two-lane country road, the alcohol in his body caused him to begin vomiting violently. He attempted to vomit while driving and placed his head out the vehicle window. With his seat belt unfastened, and while attempting

to complete these actions, he steered his vehicle into the opposing lane of traffic causing a head-on collision with an oncoming vehicle. The member sustained fatal head injuries. From this incident, there are several additional safety lessons from which to take heed.

Lesson Learned # 1: Drinking and driving is fool's play. Drinking dulls the thinking, and a capable driver operates on all mental faculties.

Lesson Learned #2: True friends don't let their buddies drink and drive; they look out for one another's safety.

Lesson Learned #3: A seat belt cannot do its job in saving a life if it is not given the opportunity.

Lesson Learned #4: The human body does not always deal well with excesses — so don't drink heavily and then consume a large meal, a violent bodily reaction may occur.

What's the overall message behind these mishaps? It's simple: Don't drink and drive; buckle up properly; watch your speed; and look out for each other. Let your safety conscience be your guide. Don't let a nonchalant attitude (i.e., overconfidence, complacency, or undermotivation) concerning motor vehicle driving compromise your personal safety. The attitude you adopt could cost you your life. ■

Drinking & Driving Don't Mix!

Consider the Risks ...

- 24% of young male drivers involved in fatal crashes had been drinking.
- Alcohol-related crashes account for over 40% of total traffic fatalities.
- 30% of fatally injured motorcyclists are intoxicated.
- Of young drivers who were drinking and killed in crashes, 82% are unrestrained.
- On average, an alcohol-related fatality occurs every 30 minutes; and a person is injured in an alcohol-related crash every 2 minutes.

Consider the Consequences ...

- Increased auto insurance rates.
- Repair or replacement of a crashed vehicle.
- Suspension or revocation of your driver's license.
- Potential civil lawsuits filed against you.
- Damaged career and punitive action.
- ***Injury ... or death ...*** to yourself, your loved ones, or others.

Make this holiday season a safe one for you and your family. Don't drink and drive — it's not worth the risk.