

The Combat **EDGE**

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Deployed Operations

Defending America

The Combat EDGE

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Cover photo by
SrA. Jeff Fitch

COMBAT SAFETY

As we begin a new year, the terrorist attacks of Sept. 11th still linger in our minds and in the minds of our combat forces overseas. Because of the attack on our homeland and our response as a nation, I believe we all have a renewed appreciation for our freedom. This freedom has always come at a cost; our military forces have always paid that cost.

When each of us joined the Air Force, we swore an oath to support and defend the values and freedoms of this great Nation. We can never forget this oath. Service to our country is top priority, and we must accomplish this service safely.

The best leaders forge an equitable balance between what's best for the unit and what's best for individuals. In striking this balance, they must make tough decisions, many of which involve safety issues. Even in wartime, taking the proper steps to do the job safely may not always be the most popular decision, but it is always the right decision.

Today, thousands are deployed in support of Operation ENDURING FREEDOM, and nearly 100,000 active-duty military people, 10,000 civilians, and 68,000 Guardsmen and Reservists at 23 installations in ACC train every day to support our wartime requirements and missions. Leaders must never forget that people are our most precious asset. Operating safely saves lives and protects our combat resources.

Protecting our people is paramount and I will not send America's Airmen into combat without the best force protection available. Our best force protection action is safe operations. That means loading munitions correctly, flying missions correctly, and not taking unnecessary risks. We must effectively and safely accomplish our missions so that if there's a call for more boots on the ground, we will be there to kick down the door ... so that Soldiers and Marines won't have to wade through their own blood as they win this war or the next one. We need everyone in this fight.

In the coming year, your Nation will ask you to make more sacrifices for the mission. They won't always be easy. However, the safety and security of this Nation is at stake. Your sacrifice ensures America's freedom.

Train hard. Fight hard. Be safe.

General Hal M. Hornburg
ACC Commander





OPERATION NOBLE

By Mr. Jim Garamone, American Forces Press Service

Defending the Ho

WASHINGTON — Since the Sept. 11 terrorist strikes in New York and Washington, many Americans have been calling for the military to do more for “homeland defense.” The recent Quadrennial Defense Review also said the Department of Defense must make homeland defense its first priority. Yet the U.S. military doesn’t need that kind of reminder — homeland defense has

been its first priority since the founding of the Republic.

Many Americans may not see things that way, but it’s because the nature of that defense and the agencies involved have changed over the years.

Providing for the common defense was so crucial and basic a government obligation that the framers explicitly said so in the Preamble of the Constitution. When George Washington became president in 1789,

“common defense” primarily meant two things: defeating a foreign invasion and defending against Indians.

Military forces — and this included the various state militias — were raised to defend the country against England, France, and Spain. With the Revolution fresh in their minds, American leaders considered Britain the main enemy and a second war and possible invasion their greatest threats.



Photo by Sgt. Michele G. Misiano

“For many of us Homeland Defense missions are new. However, it is a mission the military has conducted since our birth as a nation. During this time of change and increased operations tempo at home and abroad, it’s important to stop and think about how to safely conduct our missions. To understand what we now face, it’s important to understand where we came from.” *The Combat Edge*

The Army and the Navy were the homeland defense. Congress authorized the Army to build or strengthen fixed harbor defenses and the Navy to build blue-water ships to defend America’s right to the sea lanes.

The USS Constitution, berthed in Boston, is a material example today of this building program. Fort Monroe, Va., Fort Washington, Md., and Fort McNair, Washington, D.C., are also remnants of these homeland defense efforts.

This does not mean the defenses were successful. During the War of 1812, neither Fort Washington nor the one that is now McNair, stopped the British from capturing Washington and burning it. Seems the forts were in place, but not the manpower to adequately garrison them.

A bit later in the war, the British wanted to burn Baltimore as they had Washington. Fort McHenry in Baltimore Harbor withstood a British naval onslaught that inspired eyewitness Francis Scott Key to pen “The Star-Spangled Banner.”

After the war, Congress appropriated more money to harbor defense. The best and brightest graduates of the U.S. Military Academy became engineers, and many were assigned to work on these fortifications. Robert E. Lee worked all along the East Coast building brick forts to defend the United States from foreign enemies. Fort Pulaski on the Savannah River in Georgia, Fort Totten

in New York and Fort Jackson on the Mississippi were just some of the forts strengthened or built during this time.

In 1861, the Civil War broke out at Fort Sumter in the harbor of Charleston, S.C. The masonry fort withstood Confederate pounding, but the Union garrison surrendered because food was running out.

But technology was already passing these forts by. Conventional wisdom was that forts could withstand anything a ship could shoot. That wasn’t true with the Union Navy’s new rifled cannons. The weapons fired projectiles at higher speeds and with greater penetrating power than smooth-bore guns. Union ships pulverized Fort Pulaski in 1862 and ran past the forts on the Mississippi to take New Orleans.

The forts built at such expense and with such effort were obsolete.

On the frontier, the U.S. Army patrolled. Soldiers protected settlers and trade routes. In many cases, the Army acted as “frontier cops.” This mission would continue through the 1890s.

After the Civil War, the Reconstruction Era saw changes in homeland defense. The Army occupied and policed the South. It propped up courts and protected former slaves, and soldiers had arrest powers. Reconstruction ended in 1876. The passage of the Posse Comitatus law in 1878 ended the military’s having civilian law enforcement powers.

France, though a Revolution ally, claimed ownership of a huge tract to the west that posed a potential threat to American interests. Spain held Florida and virtually all the lands to the west not claimed by the French.

French and British naval ships both preyed on American merchantmen. In the interior of the United States, settlers confronted American Indians as the boundaries of the country pushed west.

In the latter part of the 19th century came another era of ship-building. While Americans still considered the Atlantic and Pacific oceans enough of a defense against foreign enemies, a strong Navy upon those waters was important. The U.S. Navy built larger, all-metal steam ships that sported larger and larger guns.



Photo by Lt. Col. Terry Moudrip



Photo by MSgt. Mark Savage



Photo by MSgt. Don Taggart

The theories of Alfred Thayer Mahan became current. Americans viewed the Navy as America's first line of defense. Mahan, who wrote "The Influence of Sea Power upon History" and retired as a rear admiral, was instrumental in persuading Americans that the United States needed a large "battleship Navy."

By the time the Wild West was tamed, the Army was reduced to maintaining small garrisons in the West and now-obsolete forts in the East.

In 1898, the Spanish-American War broke out. During the 6-month war, the Navy handily defeated Spanish fleets off Cuba and in Manila Bay, the Philippines. But Americans were shocked at what they perceived as thousands of miles of undefended coasts. In the years following the war, money poured into building new defenses around U.S. ports. Retractable guns and electric mines were the primary defenses. The coastal artillery branch of the Army manned these posts. They were never tested.

Another result of the Spanish-American War was the United States obtained the Philippines, Guam, and Puerto Rico. A Navy able to keep the sea lanes open became a necessity.

In World War I (1917-18), the British bottled up the German fleet. America girded for war untouched by a threat to U.S. soil. The Japanese attack on Pearl Harbor in 1941 was the first foreign strike against U.S. territory since the War of 1812. While coast artillery units continued manning their forts early in the war, none ever fired a shot in anger. When it soon became apparent that aircraft and ships would be the main line of homeland defense, the Army transferred coast artillery officers and NCOs into field artillery.

During the war, the Army Air Forces and the Navy defended the

homeland. Aircraft patrolled the approaches to ports looking for German and Japanese submarines. Navy destroyers and corvettes patrolled the sea lanes and pursued enemy craft that aircraft could not engage. The Navy even launched anti-submarine blimps to patrol the East Coast. At least one blimp attacked a German U-boat and was shot down for its effort.

Air power entered the homeland defense equation during World War II. The Nazi bombing campaign against Britain and the U.S.-British campaign against Germany made real the threat from the air. The safety America felt by being separated from the rest of the world by the Atlantic and Pacific oceans evaporated.

The United States was first in developing intercontinental bombing platforms with the B-29 Stratofortress. If the United States could develop long-range bombers, so could other countries. Nazi war plans in fact called for an "Amerika Bomber."

Conventional bombs were scary enough for defense planners, but the atomic bomb totally changed homeland defense. The United States developed the atomic bomb and used two against Japan. The devastation and radiation dangers posed by the bomb caused the military to think of new means of defense. After the Soviet Union developed the bomb, the threat to America came from the skies.

The United States responded with the North American Air Defense Command; NORAD was a U.S.-Canadian organization charged with the missions of air warning and air control for North America. The command searched the skies for Soviet planes and would direct interceptors to shoot them down.

Later, with the development of intercontinental nuclear ballistic missiles, NORAD became the early warning system. To this

day, there is no defense against these missiles. The NORAD warning would give people a chance to take cover in the event of a nuclear strike.

In the minds of the average American, "homeland defense" became "civil defense." And civil defense programs consisted of urging families to take cover and build fallout shelters and directing the development of community air raid shelters. Air raid drills became as common at schools as fire drills — children practiced hiding under their desks or sitting together in the hallways.

In the traditional military sense, "homeland defense" meant forward deployment. U.S. forces stationed everywhere from Europe to Korea were America's line in the sand against the Soviet Union. Engaging the Soviets and their allies overseas precluded having to fight them in the United States.

With the exception of NORAD, a direct military connection to homeland defense eroded. Many Americans came to perceive the Army, Navy, Air Force, and Marine Corps as assets to defend U.S. interests in distant lands, but not ac-

tively defending U.S. shores. Wars in Korea and Vietnam reinforced this attitude, as did operations in the Dominican Republic in 1965, Lebanon in 1958, and the Berlin Wall crisis in 1961.

Historians view the 1970s as the age of detente. President Nixon recognized the People's Republic of China. He and President Gerald Ford met with Soviet leader Leonid Brezhnev. The Anti-ballistic Missile Treaty of 1972 resulted, and the two superpowers moved to relax tensions. Through this period, homeland defense was seen mainly as a function of civil defense.

In the late 1960s, terrorism in the form of plane hijackings and assaults on innocent civilians grabbed public attention. U.S. aircraft were hijacked and diverted to Cuba or Mexico City or Rome. The U.S. response was not military, but centered on law enforcement. Sky marshals appeared. FBI agents investigated hijacking crimes and threats. Justice Department counterterrorism programs appeared.

So, the U.S. version of homeland defense meant the FBI was

the lead federal agency for investigating or preventing terrorist incidents and the Federal Emergency Management Agency was the lead for remediation. The military stood by to help if called.

The events of Sept. 11 seem to be bringing homeland defense full circle. From the halls of Congress to New York street corners, Americans are calling for more military involvement in homeland defense. Sept. 11 changed the world just as surely as the nuclear attacks on Hiroshima and Nagasaki did. Defense Secretary Donald H. Rumsfeld has said that the people of the United States need to debate this issue long and hard.

President Bush appointed former Pennsylvania Gov. Tom Ridge as his director of homeland security. Ridge must see how the Defense Department fits in with all the other federal agencies and coordinate responses to threats to homeland security.

While the threats to America have evolved and changed, one aspect is clear: Whatever happens, the Defense Department will play a major role in defending America. ▶

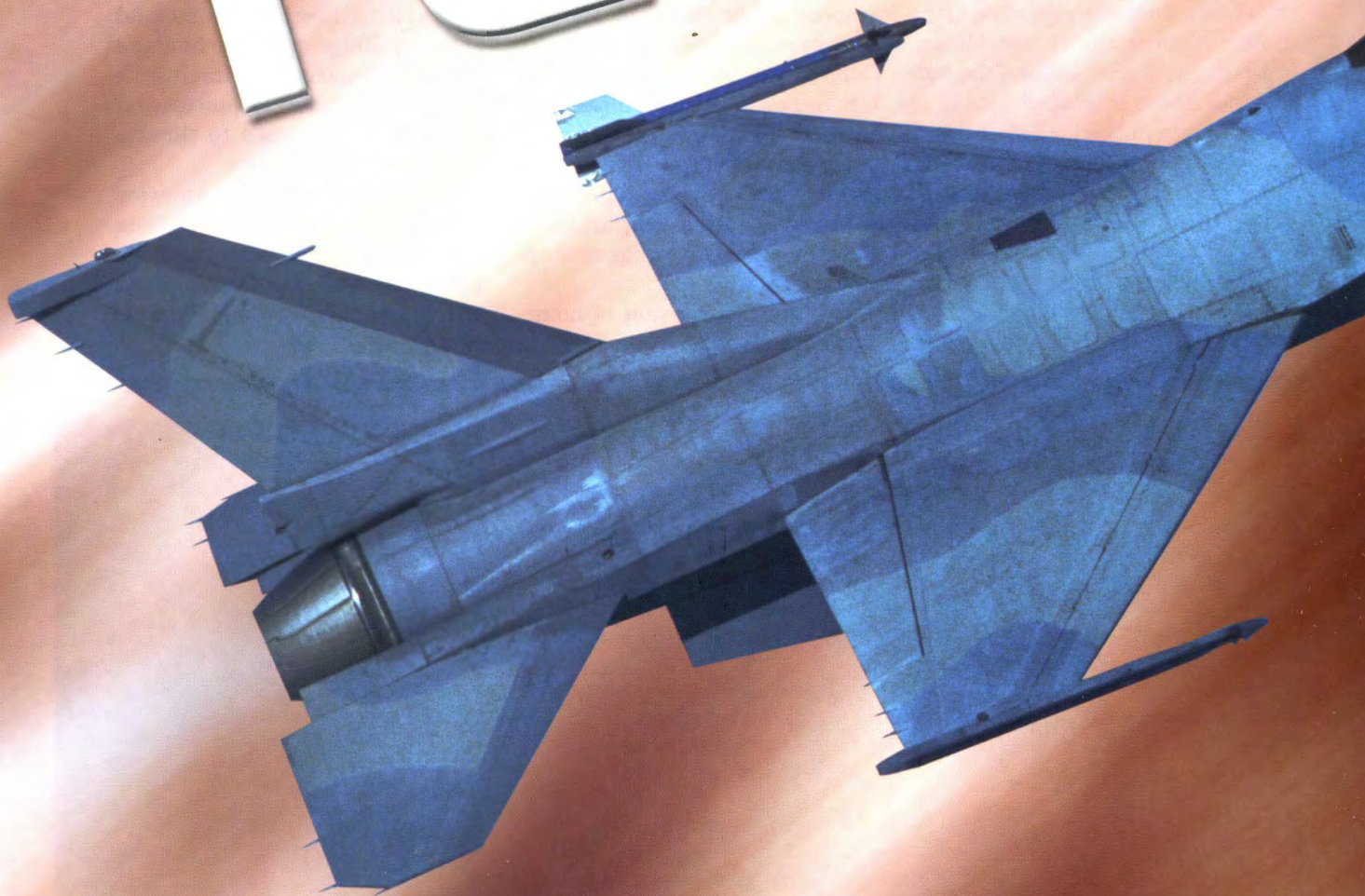
NOBLE EAGLE Statistics

- The Air Force is part of the national - international effort to increase security at home
- More than 11,000 people are maintaining more than 250 aircraft
- The Air National Guard is providing 80 percent of the aircrews flying more than 120 fighters
- Air National Guard and Reserves make up:
 - 3/4 of the aircrews flying more than 75 KC-135 tankers
 - 75 percent of aircrews flying more than 45 C-130's
- The Air Force is providing Homeland Security using a minimum of 40 C-130's and quick response forces capable of responding to terrorist acts within a few hours
- Coalition partners and the Total Force have a major role in Homeland Defense, like no other time in American history
- Guardsmen and Reservists are providing increased security at airports and at other key infrastructures on the ground
- NATO is deploying forces to this side of the Atlantic to help protect and defend America



Photo by MSgt. Don Taggart

Tumbli



ing



Over the Desert

© Photos by 2001 Dean Garner/KN1, DeanGarner.com

Ever thought about what it would be like to fall from the sky — inverted and headed straight down towards a desert floor — I certainly didn't! There I was ... a highly experienced and mission ready F-16CJ pilot deployed to Prince Sultan Air Base flying just another “routine” Continuation Training (CT) sortie in a combat Area of Responsibility (AOR).

The training profile for my first mission in theater was a 2vX Dissimilar Air Combat Training (DACT) mission. The only anomaly was that the aircraft had wing tanks and a centerline pylon store. This was a different configuration than the one my home station uses for the vast majority of training missions. No problem, right — wrong!

The “demons” of the sky are always out there. As our experience increases, we have a tendency to push them off our shoulders and shove them towards the back of the cockpit, along with our helmet bags. We sometimes forget that they are ever present and waiting to surface at the most inopportune moments. I learned this lesson very well that day.

It was a crystal clear, sunny day in the desert. The CT mission was going “as fragged,” from the coordination brief all the way up until the first commit. I was flying on the wing of a junior flight lead to see how he would solve the tactical problems of the day. He missed targeting me to a bogey that was beaming to the south and instead directed me to the middle of a hostile group. I noted the error for debrief purposes and proceeded to my target group for the kill.

In the midst of my engagement, a call was made that my flight lead was a mort. I tried

to enter a single circle engagement. After two more merges in a slow speed, nose position fight, we ended up in multiple stacks. Twice my adversary and I fell off, fighting for a three-to-nine advantage. As my adversary fell off for a third time, I saw an opportunity to enter a gun engagement zone. Then it happened ... the slow speed horn activated.

A quick cross-check of my instruments showed 160 knots and 13,500 feet Above Ground Level (AGL). Still at 60 degrees nose-high with 110 degrees of bank, I immediately started a nose high recovery. Unfortunately, my airspeed quickly decreased from 140 knots to zero. As advertised, the jet “hung up” ... I had departed controlled flight. While knocking the flight off and executing the critical action procedures for



I saw an opportunity to enter a gun engagement zone. Then it ha

to separate, but was forced to merge high aspect with a single bogey. I saw a possible tactical advantage and decided

“Out of Control Recovery,” it dawned on me that the only other time I had



used these was in the simulator. I hoped they were as effective as I remembered. After three full pitch oscillations, I returned to controlled flight at 6,500 feet AGL and completed the recovery by carefully flying out of the resulting dive. We did a battle damage check and returned to base via a straight-in landing.

I admit that this particular situation could have been avoided. In retrospect, it would have been proper to terminate this engagement after the first stack since this was an ACT mission and not basic fighter maneuvers. However, I overlooked that point in my zeal to press an attack and compounded my error by improv-

during my unit's spin up at MAPLE FLAG.

Perhaps most importantly, I learned how critical it really is to not delay your recovery procedures. Trying to regain control of my aircraft after losing 7,000 feet of altitude and finding myself in a dive at 6,500 feet AGL was not a comfortable feeling at all. If you do find your-

self in a similar situation, it is particularly important to remember not to remove your left hand from the manual pitch override switch until the recovery is completed.

It is also important to mention that, during my recovery, I received no less than five radio calls asking for my

position and status. If I had elected to answer those calls, I am certain the outcome would have been very different. In defense of those making the calls, they had the perception that I was just performing the second half of a loop.

Here's the tip to fly away with — don't let the "demon" that overtook me that day (an unbridled sense of urgency) reek havoc in your cockpit, be it over a combat AOR or flying an everyday, "routine" CT mission. ►

Editor's Note: Story submitted from Prince Sultan Air Base, Saudi Arabia.



I recount this story here in an effort to increase everyone's "Bag of Experience" so none of us have to rely on our "Bag of Luck." First of all, I'll be the first to point out that I would have most likely jettisoned my external stores if this had been a real combat engagement.


erly analyzing the aerodynamic limitations of my aircraft. Despite the fact that it is intuitively obvious that airspeed in a high drag configuration will decrease more rapidly than it does in a clean jet, I failed to maximize the performance of my aircraft within those limits.

pened ... the slow speed horn activated.

Having said that, I do feel that it is important for us to be able to train safely with nonstandard aircraft configurations.

Old habits die hard. I had tried to fly this sortie the way I had done it in a clean Fighting Falcon just a couple of weeks prior,



 Digitally created by SSgt. Neil Armstrong

In a previous life as a C-21 instructor pilot, I thought I had just about seen it all ... from St. Elmo's fire to having to go around on short final because a rather large tortoise was on the runway. I have experienced a lot ... from the leans during a 540-degree descending turn to other vestibular and somatosensory spatial disorientation episodes during acceleration and deceleration in instrument meteorological conditions. Despite this history and some 1,500 hours of flying time, I still was not prepared for my "near space" black hole encounter.

The black hole illusion has been cited in many approach-to-landing mishaps. It is usually associated with an approach at night over dark, featureless terrain with a strong (read bright) visual object existing beyond. Human nature is to focus on the distant visual object which usu-

Black Holes

By Lt. Col. Dave Hagginbotham, Langley AFB, Va.

ally sets up a lower than desired approach.

My copilot and I took off from Maxwell AFB, Ala., after dusk for a "milk run" shuttle flight to Eglin AFB, Fla. It was clear and a million weather. We could have flown the less than a half hour direct flight without navigational aids because of the perfect visibility and unmistakable ground

lights below. We had a tally on the runway at least 30 miles out to the north. We could have easily reported base with gear out of a visual downwind, but the old Military Airlift Command regulations — yes, this was more than a little while ago — required us to request a precision approach. There was a land — versus sea — breeze which meant aircraft



I had flown a number of coupled approaches down to minimums, especially at Andrews AFB, Md., where the weather never seemed to drop below 200 and a half, but briefed the copilot that I would hand fly this Instrument Landing System (ILS) approach. Now headed northbound, the lights on the shoreline provided a somewhat better attitude reference than the indistinguishable black ocean and skies behind us, but I honestly could not have told you if our altitude was 100 feet, 1,000 feet or 10,000 feet above the waves. About 5 miles out, still feet wet, we intercepted glide slope and I began descending — relying upon what I did not recognize at the time was mostly visual cues (but not the visual approach slope indicator) from the runway — DANGER Will Robinson!

were landing to the north so we continued on a southerly radar downwind heading as we descended to glide slope intercept altitude.

The visual transition from overland to over water was sudden and dramatic. Although there was no discernable horizon to the south, the lights of Niceville and Ft. Walton Beach had given (past tense) us a definite attitude and altitude reference. A mere mile or two out over the Gulf, my transition to instruments, not to mention aircraft control, was rougher than usual. Another aircraft delayed our turn to base leg, but it was not long before we were configured, on airspeed, altitude, and localizer centerline, on about a 10-mile final to the runway.

Crew Resource Management (CRM) had not been institutionalized yet, but I do know my “Situational Awareness” or “SA” got a rude awakening when the copilot politely queried if I was intending to fly the ILS or had — perhaps all on my own — decided to fly a localizer instead. Rapidly approaching a full dot below glidepath, I forced myself to ignore everything outside the three-ply Plexiglas and focused 100 percent on getting back on glidepath while mentally admonishing myself for such a poor display of airmanship. The landing was uneventful, but the preceding “if not but for the grace of God — or in this case a sharp and unhesitant copilot” experience, which played out entirely in a mere matter of seconds, was one of the more sobering events in my aviation career.

Aerospace physiologists classify three types of spatial disorientation: incapacitating — the most rare; recognized — thanks to my copilot’s unashamedly better SA; and unrecognized — ***the most dangerous***. So, regardless of your experience, if something looks or even feels unusual, always stay with the basics:

1. Fly instrument approaches with primary reference to your instruments until transitioning to land at the visual descent point or precision approach minimums.

2. Know your instrument approach — know which type of visual approach slope indicators are or are not available on all runways at your intended destination and alternate airports; and, most importantly, use them!

3. Brief and fly utilizing good inter- or intra-cockpit CRM skills. Aviation is not as inherently dangerous as it is unforgiving.

4. If you get spatial D’d — trust your instruments as you recognize, confirm, and recover from any unusual attitudes. Then, confess to yourself, your copilot, or your wingman. Finally, fly an autopilot-coupled approach, seek visual meteorological conditions to recage your gyros or transfer aircraft control to an unaffected pilot.

You might encounter this illusion — just as I did — during an over-water approach to Eglin, Diego Garcia in the Indian Ocean, or any number of other similarly situated airfields. Or it might happen to you during your next aerospace expeditionary force deployment over the “seas of sand” in Saudi Arabia or Kuwait. Be aware of and maintain a healthy respect for this and other similar hazards as you continue to ***FLY SAFELY!*** ➤

The black hole illusion has been cited in many approach-to-landing mishaps.

Bio Terrorism

By Lt. Col. William G. Courtney, Langley AFB, Va.

The use of biological agents by terrorists is no longer just a threat. Recent events have shown that our enemies have a weapon that was once thought would be primarily used to defeat our fielded military forces. However, the target has not been the military, but people going about their daily routines. This has clearly been an attack aimed at creating terror and disrupting our way of life. Did it succeed?

Unfortunately, innocent people have been killed and fear has been apparent in our society. However, this recent attack, along with related scares about suspicious "white powders," appears to be waning. We can now look back and see what has been learned.

patients diagnosed with inhalation anthrax, once thought to be practically 100 percent fatal, walked out of the hospital. Air Force (AF) health care providers are particularly alert for bio-agents, due primarily to extra training mandated by our Surgeon General. New technologies that can identify an organism in a couple of hours instead of days are being validated in the field. In the face of dozens of suspected incidents at several AF bases (all false alarms), the exceptional teamwork of our security forces, civil engineering readiness flights and first responders, medical communities, and their civilian counterparts was appropriate and dispelled fears. This also displayed to our enemies that we can respond effectively. People

aware, but we are not paralyzed. World Series games, Hollywood award shows, and personal vacations went ahead as scheduled.

Anthrax is a disease that is not passed from person to person. However, there have been many recent news stories about the specter of an intentional release of smallpox, a disease that does spread between people. Once the most feared of all diseases, it was completely eradicated from the human race in the late 1970s through a remarkable cooperative effort of all nations. Many of the stories include very alarm-

... vigilance, good health, and exercise are our first-line of bio-defense.

A very high index of suspicion of anthrax, especially following the first case in Florida, allowed health care providers to effectively treat further cases. Two

are concerned, but a recent CNN/USA Today/Gallup Poll found only one in 10 Americans is very fearful that a family member will fall victim of anthrax. We are

will be permanently disfigured; it is untreatable; etc. There is truth in all these statements, and we cannot downplay the significance of an intentional release of

ing statistics: such as one person can infect up to 20 others; almost no one is immune; up to 30 percent of the infected will die and many more



smallpox. However, we are not defenseless against such an attack.

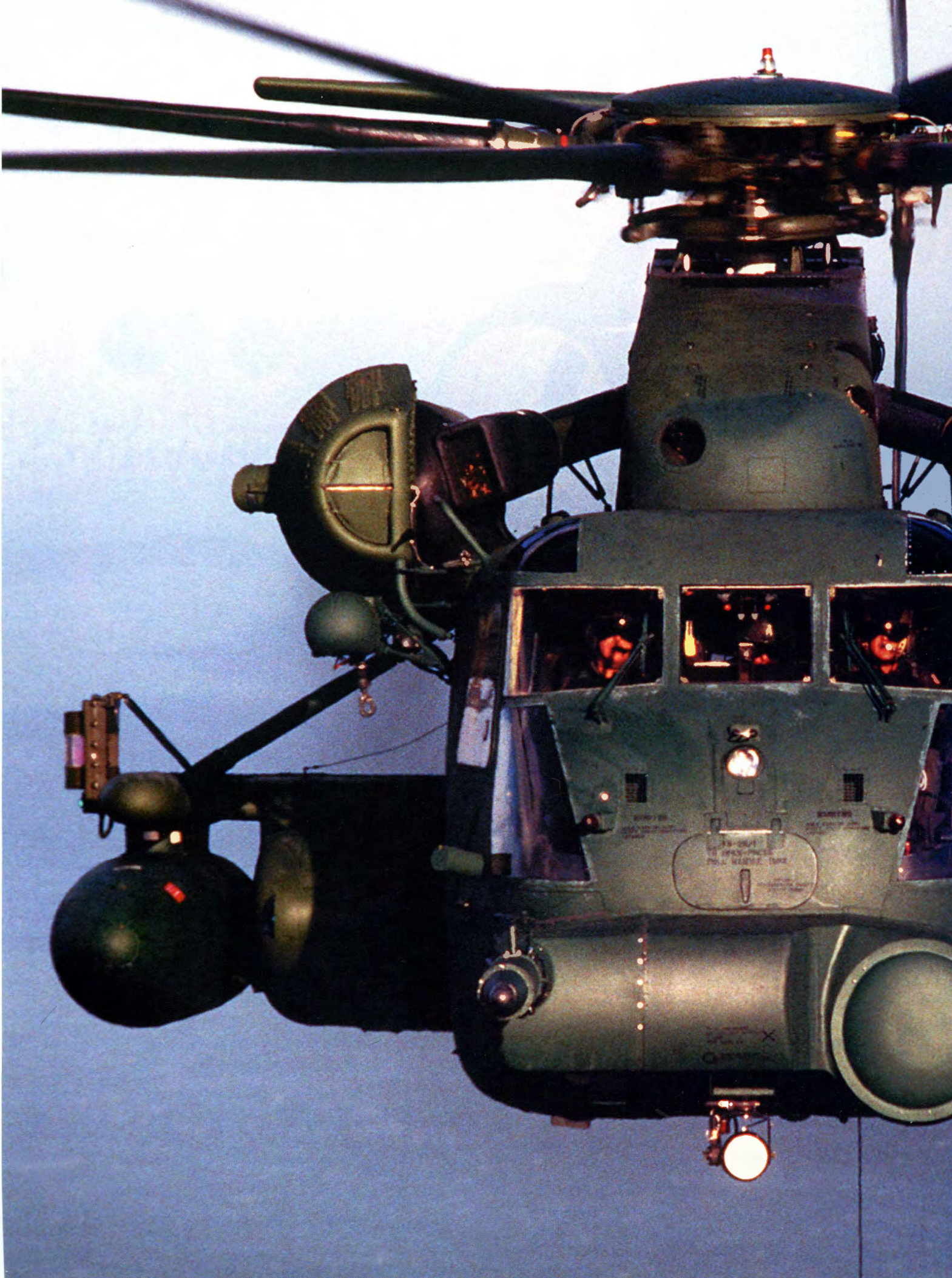
Many naturally occurring outbreaks prior to the mid-1970s were successfully controlled, and we have these examples to draw upon. Health officials throughout the world do know what to do. Actions include isolation and the immediate immunization of the closest personnel contacts with

vaccine that is kept specifically for this purpose. Our health care providers are also very alert for the symptoms of smallpox.

Although military forces were not targeted by the most recent terrorist attacks, we must not let down our guard. All personnel should remain on highest alert for suspicious packages and activities. Keeping healthy through proper nutrition, exercise, getting adequate sleep, and keeping cur-

rent on immunizations will not make us immune to an attack, but it does increase our ability to fight off infections. So vigilance, good health, and exercise are our first-line of bio-defense. Our military health care system is also poised to identify and respond to any bio-attack threat. ►

For more information contact the Centers for Disease Control at <http://www.bt.cdc.gov/> or ask your primary care manager.



MH-53J



Photo by Mike Reinhardt

The MH-53J Pave Low III's mission is low-level, long-range, undetected penetration into denied areas, day or night, in adverse weather, for infiltration, exfiltration, and resupply of special operations forces. The Pave Low III heavy-lift helicopter is the largest, most powerful and technologically advanced helicopter in the Air Force inventory.

Builder: Sikorsky • Power Plant: Two General Electric T64-GE/-100 engines
Thrust: 4,330 shaft horsepower per engine
Length: 88 feet • Height: 25 feet • Rotary Diameter: 72 feet • Speed: 165 mph
Ceiling: 16,000 feet • Maximum Takeoff Weight: 46,000 pounds • Range: 600 nautical miles • Armament: Combination of three 7.62 mini guns or three .50 caliber machine guns • Crew: Officers, two pilots; enlisted, two flight engineers and two aerial gunners • Date Deployed: 1981 • Unit Flyaway Costs: \$40 million • Air Force Inventory: Active force, 13 MH-53J's

Photo by MSgt. Dave Nolan

Pilot Safety Award of Distinction

During an Air Combat Maneuvers (ACM) engagement, Lt. Jason Settle experienced an afterburner blowout on the left engine of his F-15C. He immediately pulled the left throttle out of afterburner and “knocked off” the fight while maintaining aircraft control. A battle damage check by his wingman revealed a fuel leak from beneath the left engine. Settle began an immediate return to base while initiating the fuel leak checklist. After some troubleshooting, the leak remained. Checklist policy specifies engine shutdown as a last resort effort to retain fuel. About 70 miles from the Atlantic coast, he shut down the left engine. This success-

fully contained the fuel leak and allowed Settle to return to Langley single-engine and shut down immediately after landing. Investigation of the left engine revealed a ruptured afterburner fuel line deep inside the engine bay. Lt. Settle’s decisive actions, strict checklist discipline, and exceptional flying skills are what bought him and his aircraft enough time and fuel to return to home base safely and keep this potentially disastrous problem under control.



1st Lt. Jason Settle
27th Fighter Squadron
1st Fighter Wing
Langley AFB, Va.

Flightline Safety Award of Distinction

SrA. Kelly L. Crouse and A1C. Andrew P. Casanova
523rd Fighter Squadron, 27th Fighter Wing, Cannon AFB, N.M.

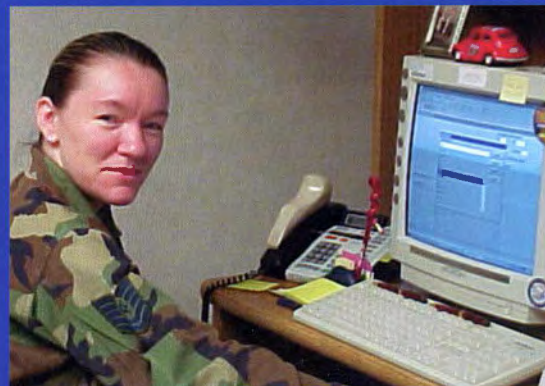
Airmen Kelly Crouse and Andrew Casanova were assigned the task of performing a functional check of the afterburner flame holder on an F-16. During an afterburner run, Casanova noticed fuel dripping from the back of the engine. He immediately directed the engine run technician, Crouse, to initiate emergency engine shutdown procedures and the engine was shut down uneventfully. Crouse removed several panels and inspected for a fuel leak but found nothing. The team performed a second

engine run with the panel off. During the second run, Casanova noticed a flame originating from the top of the engine and again directed emergency shutdown procedures. Both airmen removed the engine and performed an in-depth inspection. They discovered a broken fuel line in an extremely hard-to-find location. The F-16 engine can produce fuel flow in excess of 60,000 pounds per hour. Had Crouse and Casanova not acted as efficiently and effectively as they did, a catastrophic fire or explosion could have resulted. Their actions averted possible death or injury and the loss of combat aircraft. The teamwork, communications skills, quick thinking, and attention to detail exemplified by these young airmen during such an uncommon situation was extraordinary.

Ground Safety Award of Distinction

Working as the 4th Comptroller Squadron Additional Duty Safety Representative, TSgt. Jodi Fussell was handpicked by the commander to revive the squadron safety program. Her leadership resulted in the unit’s unprecedented zero Class C mishaps and an immaculate safety track record. During a recent wing safety assessment her unit safety book and bulletin board were lauded as “exceptional.” She is routinely praised by wing safety for establishing the best safety program on Seymour Johnson AFB — “A benchmark for the wing to follow.” Making full use of her resources, including the Internet, she developed a “Tip of the Week” and “Thought of the Month” program. These programs ensured 100 percent contact with all assigned squadron personnel. In an effort to cover more area she also de-

veloped a weekly on-line briefing to stress hazard identification on and off duty.



TSgt. Jodi M. Fussell, 4th Comptroller Squadron
4th Fighter Wing, Seymour Johnson AFB, N.C.



Aircrew Safety Award of Distinction

Cpts. Chris R. Arnold and Christopher A. Schwartz
1st Lt. Marc A. Genaille, TSgt. Dale A. Dauphinais
SSgts. Rusty L. Cope, Karl L. Pryor, Lance R. Isenhour
A1C. Michael R. Capps, 347th Rescue Wing, Moody AFB, Ga.

A rescue HC-130/P refueler, based in the Middle East, was found to have severe corrosion in the tail section and a serious fuel leak problem which limited normal fuel loading. Engineers granted permission for a one-time ferry to a depot in Portugal for repair. The above crew volunteered for the mission and extensively pre-briefed emergency procedures and crew actions for in-flight emergencies. The flight waiver limited the aircraft to 30 degrees of bank or less, less than 2,000 pounds of cargo, 10 inches of pressurization, and 30 vertical velocity indicator on landing. After departing Ramstein AB, Germany, for Portugal on the final leg, the crew experienced failure of the radar over France. They elected to continue flight in visual meteorological conditions since there was no

hazardous weather forecasted en route. Near halfway through the flight, noxious fumes of burning wires began to emanate from beneath the navigator's desk. The pilot directed all crewmembers to don oxygen masks while the flight engineer attempted to locate the source of the smell. The crew prepared to divert to the nearest suitable runway surface, which was ahead in Spain and on the crew's original intended course. As the pilots headed for the runway, they again confirmed all crewmembers were on oxygen, requested and began a descent from 21,000 feet, and directed the engineer to begin depressurization to fully ventilate the aircraft. All indications of burning electrical systems were alleviated, and the aircraft commander then elected to continue the short distance to the final destination. Due to excellent pre-flight preparation and crew coordination, the crew's immediate and appropriate actions prevented a catastrophic in-flight fire and loss of the aircraft.

Crew Chief Safety Award of Distinction

On Oct. 11, 2001, SrA. Nicole Sandres was the dedicated crew chief and refuel supervisor of an F-15E Strike Eagle. While preparing to refuel the aircraft, she removed the single point refuel cap. Unknown to her



SrA. Nicole S. Sandres, 334th Fighter Squadron, 4th Fighter Wing, Seymour Johnson AFB, N.C.

the automatic nozzle shut-off plunger was stuck in the open position. As the cap was removed, large amounts of fuel began to spill from the aircraft. Trying to install the cap while being completely saturated in fuel, it took two attempts before she was able to get the cap in place and reset the plunger. By her actions, Sandres prevented a near

catastrophic fuel leak during the peak time of aircraft taxiing in the area in front of and behind the aircraft, also avoiding the potential for a fire and damage or destruction to one or more F-15E aircraft valued at \$44 million. Due to her quick actions in stopping the fuel spill, SrA. Sandres was also able to avoid letting the fuel enter a nearby storm drain and possibly causing an environmental hazard.

Your Awards Program

While the purpose of the awards program is to recognize deserving individuals/groups/units for their mishap prevention efforts, we also want to give our readers the who, what, when, where, why, and how things turned out. In addition to serving as recognition, award nominations and write-ups provide valuable lessons learned for our readers. The information could save another from a similar situation/hazard mishap.

Flight Safety Award of the Quarter

MSgt. Vincent Reed's superior daily management of one of the largest and most diverse flight safety programs is directly responsible for the unit's meticulous tracking of potential hazard trends during 23 in-flight emergencies. His identification of a re-occurring Left Bleed Air Caution indication on an F-15E stationed at Nellis AFB, Nev., showcases the effectiveness of his program. As the investigating officer on four mishap events, his close integration with both aircrews and maintenance personnel enhanced the quality and effectiveness of the wing's mishap investigative program. Reed was instrumental in assisting maintenance personnel to correctly isolate whether aircrew actions or aircraft equipment anomalies were contributing factors during separate flight control incidents. His personal

initiative, thorough flight safety investigative efforts, and dedication to positive causal identification saved F-16 and F-15 maintenance personnel approximately 10 hours of additional troubleshooting efforts. These efforts led to the wing's record low of only one Class E mishap for the 3rd Quarter of FY01. Sgt. Reed's dedication to the 53rd Wing mission during 25 test plan safety reviews sets the foundation for the wing's zero test-related mishap rate!



MSgt. Vincent B. Reed
53rd Wing
Eglin AFB, Fla.

Ground Safety Award of the Quarter

MSgt. Fred Bonner's Ground Safety Inspection and Program Management Assessments have all been rated "Outstanding." Bonner's keen ability to use a common-sense approach to reach effective conclusions has led to countless outstanding results. One example is his meticulously updated and maintained unit safety management book, used as the wing standard for others to emulate. He individually verified and documented that every squadron member had been properly safety trained, resulting in zero reportable mishaps on and off duty. This directly resulted in zero off-station reportable mishaps despite over 100 leaves and temporary duties. He takes day-to-day safety seriously, as demonstrated by his regular occupational and environmental safety, fire prevention, and health self-inspections. He created a fire and emergency evacuation plan to ensure all squadron members know the proper procedures in case of an emergency. His plan is now a critical part of the hurricane evacuation program for the squadron. Bonner established flight-working groups to brainstorm potential safety problems along with viable resolutions. He

immediately organized a squadron leadership meeting to prioritize the problems, and then forwarded the completed list to the wing safety office for wing-wide dissemination and use. Items identified by the flights are being used to design personal risk management cards for squadron members to carry on their key chains or in their wallets. The purpose of the card is to remind and encourage everyone to make personal risk management second nature for them and their families, both at work and home. Sgt. Bonner is very committed to developing a quality safety culture. He has created an outstanding workplace ethic that promotes individual commitment and personal involvement.



MSgt. Fred Bonner
28th Test & Evaluation Squadron
53rd Wing
Eglin AFB, Fla.

ACC is proud of our quarterly safety honorees

Weapons Safety Award of the Quarter

T Sgt. John Swindell's total dedication to safety is unmistakably the driving force behind the 86th Fighter Weapons Squadron's 12 consecutive quarters without a single reportable or non-reportable mishap. His proactive and persistent safety mindset uncovered safety-training shortfalls with civilian contractors assisting in Air-to-Ground Weapons System Evaluation Program (A/G WSEP) flightline operations. The training oversights, which included aircraft safety and danger areas, radiation hazards, and flightline drivers training, could have had catastrophic results without his intervention. While on temporary duty to Hill AFB, Utah for A/G WSEP 01-06, Swindell identified and corrected several discrepancies in the Deployed Unit Facility's life support area. He located, procured, and posted appropriate explosives symbols and warning placards to ensure firefighting personnel were aware of hazardous materials in a possible state of emergency. As a maintenance liaison, he was directly responsible for the safe and successful deployment of over 160 personnel from

the 442nd Test and Evaluation Squadron, Nellis AFB, Nev., performing core avionics upgrades to F-15 and F-16 aircraft. Under his watchful eye, deployed personnel turned numerous man-hours into 30 mishap-free sorties and safely transported several thousand pounds of support equipment. Sgt. Swindell's professionalism and meticulous application of Operational Risk Management principles made him the obvious choice to guide the Air Launched Missile Analysis Group (ALMAG) team through an Air-to-Ground Missile-130 (AGM-130) investigation. This intense and thorough inquiry revealed moisture penetration in the missile propellant assembly causing missile flight control anomalies. The ALMAG's findings resulted in a 100 percent inspection of all remaining AGM-130 missiles in the AF inventory.



TSgt. John L. Swindell
86th Fighter Weapons Squadron
53rd Wing
Eglin AFB, Fla.

ACC Safety is Proud of All Our Award Nominees

SSgt. Mark A. Baughman

Tropospheric Satellite Support Radio Crew Chief
31st Combat Communications Squadron
Tinker AFB, Okla.

A1C. Jason R. Dunn

Repair and Reclamation

A1C. Class Jason Davis

Armament

A1C. Daniel M. Broughton

Munitions

4th Equipment Maintenance Squadron
Seymour Johnson AFB, N.C.

A1C. Hugh J. McFadden

Airborne Operations Technician
12th Airborne Command Control Squadron
Robins AFB, Ga.

Mr. Joseph Bell

Occupational Safety and Health Specialist
347th Rescue Wing
Moody AFB, Ga.



Nee



A hand in the foreground points towards a military aircraft, likely an F-15, in the background. The aircraft is dark and has a glowing light on its side. The overall scene is dimly lit, suggesting a night or low-light environment.

d for Planning

By MSgt. Kenneth E. Washington, Langley AFB, Va.

Need for Planning

Planning for contingencies and developing site plans to support contingencies is an absolute necessity; particularly, in our forward and intermediate staging locations. Unfortunately, that planning does not always happen before a unit is activated for a deployment. Lack of planning becomes a major issue — especially for the Weapons Safety Manager (WSM) — once a unit is in the field. It is always better to plan for contingencies than to be the WSM who has to find a way to accomplish the

explosives part of the mission in the middle of a combat load-out or a short-notice deployment.

Contingencies, such as DESERT STORM, DESERT SHIELD, DESERT FOX, DESERT THUNDER, ALLIED FORCE, and ENDURING FREEDOM, seem to be occurring more frequently and with little notice. Each of these deployments has highlighted the fact that units don't always have the site plans they need to handle the explosives operations that accompany contingency missions. This happens



in most of these cases because the range of possible contingency operations has not been detailed in an existing operational plan. As a result, this lack of planning frequently results in commanders having to accept far greater risks in order to accomplish these short notice and high priority missions.

If explosives site planning for contingency Forward Operating Bases (FOBs) has not been completed beforehand, it becomes the responsibility of the deployment commander. However, the development of the actual site plans, which are necessary for mission accomplishment and protection of unit resources, falls squarely on the shoulders of the deployed WSM. This can be a daunting task that requires a wide range of expertise. Depending on his or her level of

experience, a deployed WSM can sometimes end up in uncharted territory.

Personnel not thoroughly familiar with siting an FOB might think it's a simple task. The WSM easily completes it by just filling out the appropriate paperwork, documenting any needed "waivers," getting the commander's approval, and then pressing on with the operation. Experienced WSMs know this is wrong!

Creative siting is a necessity when planning and setting up the myriad of explosives operations at bare-base locations. During the contingency pre-planning phase, area site surveys are conducted and area maps are developed depicting how the base will be laid out to meet mission needs. The advance team then deploys to the FOB and implements the plan of action. The WSM is usually among

the first of the safety team to arrive at a bare base and assists with infrastructure layout. They gather information via map, facility design data, and explosives routes to develop operationally safe explosives site plans and procedures. Primary WSM considerations include development and siting of aircraft parking spots, munitions holding and storage locations, munitions operating locations, and designating delivery routes. Everything has to meet operational requirements and be coordinated and accepted by the deployed staff. All distances have to be measured and appropriate quantity distance requirements applied and then documented in the site plan. After accomplishing all of this, the WSM still tries to mitigate possible exemptions.

Explosives siting for contingency locations is often like try-



Photo by MSgt. Dave Nohr

even new construction, that can have a substantial affect on explosives siting at these locations. These factors compel the WSM to apply “ridged flexibility” as a means to adapt to mission requirements and ensure safety standards are maintained. If a base is sited to conduct F-16 and F-15 air-to-air operations and then F-15E air-to-ground operations are added to the mix, the WSM is expected to fit bomb operations on the same postage stamp-size piece of real estate. Typically, this is not going to happen, at least not without extreme thought and creativity from the WSM.

The best contingency planning in the world has continually shown that there is no substitute for actual boots on the ground. As a safety professional, you can also be called upon for your safety expertise.

For instance, as the WSM to a bare-base location, the com-

area were two transportation people changing a tire on a truck. To make matters worse — and much to my surprise — there was only one 10-pound fire extinguisher in the entire area. You would think anyone would immediately recognize the situation as an accident waiting to happen.

In another instance, during a bare-base tent city buildup, I discovered that some of our people — believing they were being resourceful and doing the right thing — had connected electricity to a row of 12 tents using a single extension cord that “piggybacked” from tent to tent instead of waiting until the area power grid was established. The power source was an aerospace ground equipment “Light All” unit that was positioned to light a portion of the tent city. A fire in this area would have been disastrous. These and many other similar situations often face a

Some locations and situations present more of a challenge than others, requiring innovativeness on the part of WSMs to meet mission needs.

ing to site a moving train. Just when the WSM has everything almost figured out, the mission changes introducing new hazards into the mix or the ops tempo increases, raising the probability of a mishap. Changes like these require the WSM to re-validate the site plans and operations.

Some locations like those in Southwest Asia, Korea, and Europe are among the most active places with respect to explosives safety operations tempo. There are many factors, such as mission changes, increases in forces, lack of real estate, and

mander asked if I would go over to the fuel storage area and look at their operations to ensure people were doing things safely. Of course, I put down my site planning measuring wheel and headed to the fuel storage location to see what was going on. Although the buildup of this area had been thoroughly planned in advance, no one had planned for the unexpected. What I found upon arrival was that the fuels shop had put together a massive fuel bladder (barricaded of course) and was in the process of filling it with fuel. Within 25 feet of this same

WSM during a typical contingency deployment.

With these kinds of potential distractions, it’s critical for deployed WSMs to stay focused on developing and submitting explosives plans for the ongoing contingency operations. Getting a good head start on issues prior to leaving home station can work wonders. Search out other WSMs that may have deployed to your location in the past. A good turnover of useful information from other WSM brethren, who are familiar with the area, and a review of previous lessons learned may be especially helpful.

Once you are deployed, site plan development should be completed as soon as possible. When you have completed the site plan, have it reviewed by your Numbered Air Force's weapons safety office before forwarding it to higher headquarters agencies. Remember, any contingency explosives operation lasting more than 12 months requires Department of Defense Explosives Safety Board approval. Throughout the past few years, WSM participation in planning for deployments, Aerospace Expeditionary Forces, and other contingency operations has been vital to safe explosives operations. Some locations and

situations present more of a challenge than others, requiring innovativeness on the part of WSMs to meet mission needs. Based on mishap history though, we've actually been doing a great job at managing explosives safety at the various locations despite the many demanding circumstances.

The bottom line is, we recognize that during contingency deployments WSMs are going to be extremely busy. With everything going on — and all at the same time — the WSM has to realize that explosives site plans for contingency locations are fundamental to any unit's ability to accomplish its mission safely and

needs to put priority there. Getting involved with deployment pre-planning for worst-case scenarios at an early stage can greatly help to ease the trials and tribulations occasionally encountered during contingency deployments. Staying focused on the "big picture" and steadily working to complete site plans can benefit everyone involved. This is especially true for the next unit and WSM tasked to deploy into that unfamiliar territory. Continuity between WSMs is essential. Remember when the balloon goes up and you find yourself in the middle of nowhere with explosives and personnel shortly inbound ... BE READY! ►



Photo by SSGT. Greg Davis



SPEED is Life?

“Speed is life” is a saying we use often in the fighter community. But that is not always the case. Speed does not necessarily give you an advantage in a maneuvering fight. On the ground, behind the wheel of your car, is another case where speed is not necessarily life. In fact, excessive speed can end your life as you know it. And what do you gain by risking your life in such a way?

If your answer is time, then this chart is for you. One look should tell you that the time you gain is not worth the risks involved. Let’s say you have to drive 15 miles and the posted speed limit is 55 miles per hour. If you can average 55 miles per hour for the entire distance, that trip would take 16 minutes and 22 seconds. But, you’re late! You bear down on the old gas pedal until the speedometer reads 70

miles per hour. Using the same standard below, your trip will now take 12 minutes and 51 seconds. Congratulations! You have just saved a whopping 3 minutes and 31 seconds!

Now what did it really cost you? If you are lucky, it cost you only a few more cents in gas. But if this just is not your day, the costs can be potentially staggering. At 70 miles per hour, how

will you handle avoiding that deer, wild turkey, or hidden police car? What about that little child who just ran out in the road for his or her ball? Encountering any one of these hazards will “cost” you a lot more than 3 minutes. Is any appointment or meeting really worth it? The next time you buckle up, think about the real “costs” of the speed you choose ... ►

		SPEED					
DISTANCE		55	60	65	70	80	90
	5	5:27	5:00	4:37	4:17	3:45	3:20
	10	10:55	10:00	9:14	8:34	7:30	6:40
	15	16:22	15:00	13:51	12:51	11:15	10:00
	20	21:49	20:00	18:28	17:09	15:00	13:20
	35	32:44	30:00	27:42	25:43	22:30	20:00
	45	49:05	45:00	41:32	38:34	33:45	30:00
	60	65:27	60:00	55:23	51:26	45:00	40:00
		TIME					

Why so Cold

By Lt. Col. Craig King, Langley AFB, Va.

Like most of you, I've never spent much time worrying about wind chill computations. On the rare occasion when it was a factor in my predominately southern Air Force experience, the weather guy would tell me what the wind chill was, and I would consider it (in accordance with local guidance and common sense) before going outside to fly or work outdoors — end of story. Truth is, I've never placed much faith in wind chill numbers anyway, as I always thought they overstated the "coldness" of a windy day. As it turns out, I wasn't the only one who questioned the

Wind chill temperature is what the outside temperature *feels* like to unprotected people and animals. If the ambient temperature is above 32 degrees Fahrenheit, no amount of wind chill will make water freeze, including radiators and water pipes. Wind chill, however, is related to the rate of heat loss and translates into how cold you feel. Likewise, wind affects the amount of time it takes an exposed area of skin to suffer frostbite. It also affects the onset rate of hypothermia, which occurs when body temperature decreases below 95 degrees Fahrenheit. Because of these safety considerations, combined



... the national standard for wind chill has changed ...

validity of the old system. In November 2001, the Department of Defense, the National Weather Service, and the Meteorological Service of Canada issued a whole new methodology for computing wind chill from the combination of ambient temperature and wind conditions. How does this affect you?

with the difficulty of operating effectively in mind-numbing coldness, we in the Air Force have to consider wind chill temperature when assessing the risk of operating outside during winter months.

The old formula for computing wind chill temperature, based on experiments con-

ducted over 50 years ago and relying on equally dated assumptions, resulted in wind chill temperature measurements that are now considered too low. In order to correct these previous deficiencies, the National Weather Service, along with several federal, international, and academic institutions, has applied more current science over the course of the last 2 years and produced a system



that more accurately reflects the dangers of winter winds and freezing temperatures. This new methodology is now in place in both Canada and the United States.

I was surprised to learn that the charts I've seen at various bases, which attempt to correlate wind chill temperature with allowable exposure time, are not regulated by the Air Force. Rather, the degree to which personnel can be exposed to a particular wind

chill temperature is regulated primarily at the local level, presumably because only local authorities can take into consideration the normal work activities, operating environment, and availability of cold-weather personal protective equipment unique to their situation.

Therefore, since the national standard for wind chill has changed, supervisors and commanders need revised information in order to operate

safely. As of Nov. 1, 2001, everyone is using the new standard, including your local TV weatherperson and your Air Force weather forecaster. In certain conditions, the recent changes have significantly changed wind chill temperature computations. Without knowing the effects of these changes, you cannot make safe operating decisions during cold-weather operations.

For example, assuming an ambient air temperature of 5

degrees Fahrenheit as depicted on the top chart, and a wind speed of 30 miles per hour, the old wind chill temperature measurement was -40 degrees Fahrenheit. The new computation is -19 degrees. Nevertheless, the amount of "cold" felt by an unprotected person is the same — the higher number generated by the new system does NOT mean it is safe to operate for longer periods of time during equivalent conditions (same ambient temperature, same wind). Likewise, the chilling effect at any "new" wind chill temperature is more severe than it would appear from previous experience.

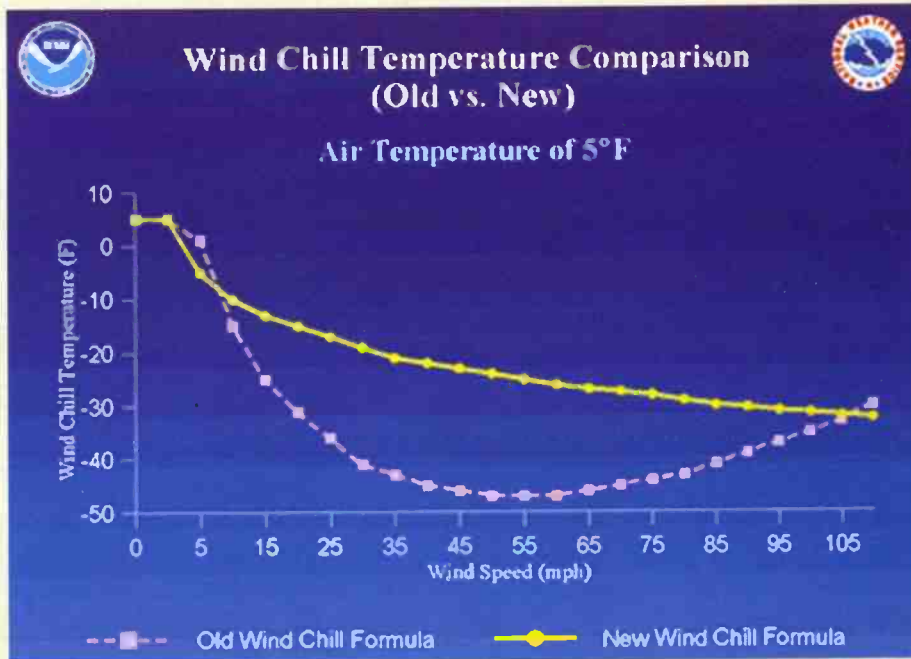
I'm not going to presume to tell everyone *how* you should go about modifying local guidance to account for the new wind chill computing system. I'm sure that revised local guidance will follow as the new index of wind chill temperatures becomes more widely understood. In the meantime, however, each of us needs to be able to translate between the new and the old systems (website with wind chill calculator is listed at the end of this article). No, it's not colder this year. However, it will seem that way if you step outside with a "new" wind chill temperature and an "old" frame of reference. ►

For more information, visit <http://205.156.54.206/om/windchill/>. This site contains a wind chill calculator, but be advised, the wind component of the calculation is expressed as miles per hour instead of knots. This may require additional conversions prior to using the calculator.

The author wishes to thank the Flight Safety staff at Minot AFB, N.D., for bringing the recent change in wind chill estimation to our attention. Also, many thanks to the staffs at AF/XOW, AFMOA/SGZA, ACC/DOW, and ACC/SGPF for editing and technical assistance.

Chilling Differences

The chart on the top graphically illustrates the difference between the systems. In certain areas, there's a drastic difference between the old and new measurement systems. The chart on the bottom depicts new estimations of the relationship between exposure time and frostbite (assuming unprotected skin). Both charts are available at the web site listed above.



Wind Chill Chart

		Temperature (°F)																		
		Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
Wind (mph)	5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63	-69
	10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72	-78
	15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77	-83
	20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81	-87
	25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84	-90
	30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87	-93
	35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89	-95
	40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91	-97
	45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93	-99
	50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95	-101
	55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-96	-102
	60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98	-104

Frostbite Times: 30 minutes, 10 minutes, 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph)

Effective 11/01/01



By MSgt. Robin J. Bunce, Barksdale AFB, La.

“Cold as Ice.” Great song from the 1970s. Ice-cold lemonade. Great to drink on a hot summer day. Ice-cold beer with names like light-ice, ice-brewed, and cold-filtered. Sounds refreshing as a cool mountain stream. References to things ice cold usually have a positive effect, but for weapons loaders, nothing strikes more fear into the heart than the thought of loading weapons in below freezing temperatures. There are two main reasons for this: the effects of the cold on the human body and the increased potential for static electricity build-up.

A loading operation can be difficult in its own right. Adding cold

weather to the mix just makes it more so. In low temperatures, fingers and toes don’t like to work as advertised. This can cause all sorts of problems. Let’s take the story of “Joe Loader” during an exercise in extreme cold conditions.

The month is January and the place is Europe, which is experiencing the coldest winter on record. Joe Loader is the number two person on a three-person F-15 Eagle load crew. The base is in Military Operational Protective Posture 4 or (MOPP 4) and he is wearing all items of the chemical ensemble. The temperature is right at zero degrees and the dew is freezing before it hits the ground. Joe is wearing a pair of

pilot gloves with a pair of rubber chemical gloves over them. (Last time I checked, rubber was not a good cold insulator.) The load crew prepares the aircraft for takeoff and the sortie is on its way.

About an hour later, word comes down advising the load crew that the Eagle has landed. Joe gets his tools together and prepares himself for the next load. As he steps out of the hardened aircraft shelter, he is greeted by a fierce freezing wind in his face. After what seems to be 30 minutes of standing in the cold, although less than a minute has elapsed, Joe cannot feel his fingers. He tries to put his gloved hands under his armpits to heat them up just



enough to try to prepare the aircraft for loading. It does not help. Joe has no feeling in his fingers and loading has become an operational risk.

Unfortunately, he doesn't want to let his crew down by giving in to the elements. The result: Cold — 1, Airman — 0. The hospital is called out and Joe is diagnosed with frostbite.

This same scene is played out at cold weather bases throughout the Air Force. Loading in the cold takes some physical and mental preparations. As a person trained to deal with explosives, doing your job correctly during the cold weather months becomes even more important. Your body will move slower, and it will take more time to do a good job, but time will not always be on your side. Because of the cold, you might try to cut corners that could end up cutting you.

Performing simple tasks in the extreme cold is not the only problem loaders face. Cold brings with it a new twist to the loading arena: static electricity! How many times during the winter months have you walked over to open a door and gotten zapped by an electrical shock? This happens because you put on more clothes when it's cold, thereby increasing the amount of static-producing material (i.e., sweaters, sleep shirts). If you are not careful, you could be mistaken for the energizer bunny.

Air Force Manual 91-201 has something to say about static electricity and explosives. It states that people who handle or install unpackaged, electrically-initiated, explosives devices and ammunition, must avoid wearing clothing made of material that has high static-producing qualities. One thing you can do is to ensure you ground yourself as of-

ten as possible to discharge any sparks that could cause an explosion. On the same exercise day that Joe Loader got frostbite, Jane Loader, got to experience firsthand the importance of grounding.

As a load crewmember during a downloading operation, Jane was taking the impulse carts out of the launcher in order to get the bird ready for the next flight. Jane ran out of room in her cart can, but she was in a hurry so she placed two of the carts in her field jacket pocket. She continued to load and unload aircraft throughout the day, forgetting about the carts in her pocket. After about 4 or

5 hours, the jacket built up enough static for the carts to electrically initiate. They burnt a hole in the jacket and singed Jane's leg. But this is fairly minor compared to what could have happened. If Jane had reached into her pocket for the carts without remembering to ground herself, she could have lost some fingers!

It is very important to ensure you take the appropriate precautions during the winter months. Preparation is key and knowing your limits can be helpful. Loading in the cold can be frustrating, but it is necessary for the mission. Wear the proper protection, take your time, and ground yourself often. If you remember these three things when the mercury drops, you'll have a better chance of getting to go home, relax, and have a COLD one there. ►

As a person trained to deal with explosives, doing your job correctly during the cold weather months becomes even more important.



Life!

Choose a Seat Belt

By Capt. Laurie Arellano, Ellsworth AFB, S.D.

I have a lot to be thankful for. I have a wonderful husband, a beautiful 3-year-old daughter, and another child on the way. But what I am most thankful for is something very simple: a seat belt.

Four years ago, I was about 8 weeks pregnant with my daughter working in the missile fields near F. E. Warren Air Force Base, Wyoming. It had been raining for several days and the Nebraska dirt roads had turned to slimy clay. It was a rainy afternoon and I was driving my assigned government-owned vehicle, a fairly

barbed wire fence. When everything stopped, I was hanging upside down in my seat with my hands still on the steering wheel, the seat belt firmly holding me in place.

Air Force training took over. I quickly checked myself and the situation, then unlatched myself and plopped onto the roof of the truck. I crawled out of what had been the window of the driver's side door not even looking back at the truck. I knew it would just scare me, and I wanted to remain calm. I called for help



and the hood was twisted and distorted. There was mud and grass all over the truck. It was wedged in odd places like the doors and windows and the passenger seat.

Looking at the wreck for the first time, I finally got scared. I shook because I knew despite all of my training, my confidence in my driving, my speed, and having a good vehicle, I had been in a terrible accident and walked away without a scratch.

I made a lot of choices that day, but the choice I remember most was the one to buckle my seat belt. It is a choice I make every time I get in a vehicle no matter how far or how fast I intend to drive. It does not matter if I am the driver or the passenger, if it is my private vehicle or a government-owned vehicle, on or off base.

Visualizing the possibilities that could have happened that day, it is an easy choice. I choose life, and I choose a seat belt. ▶

I choose life, and I choose a seat belt.

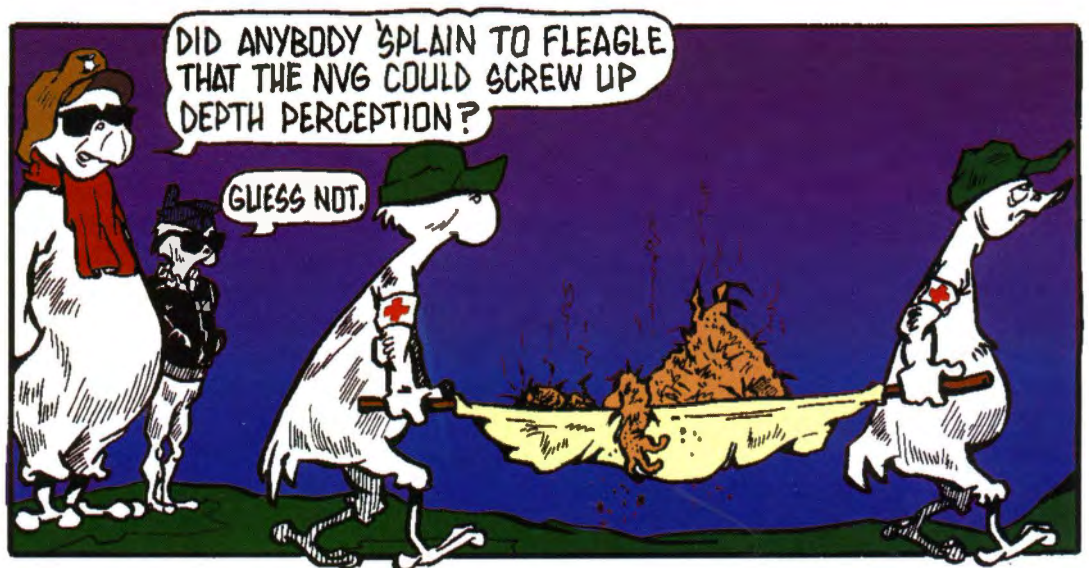
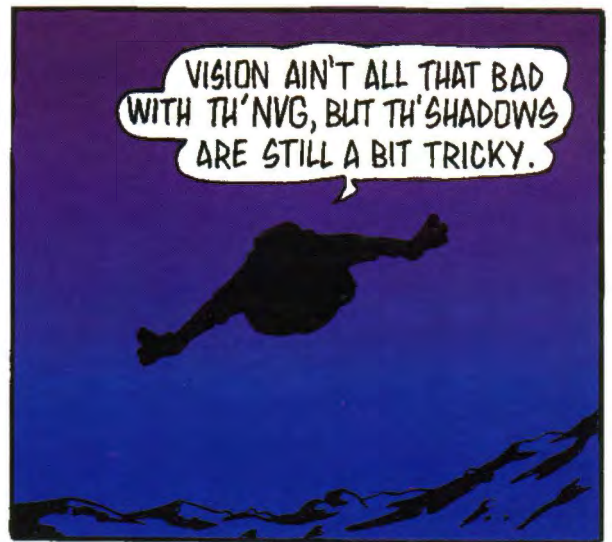
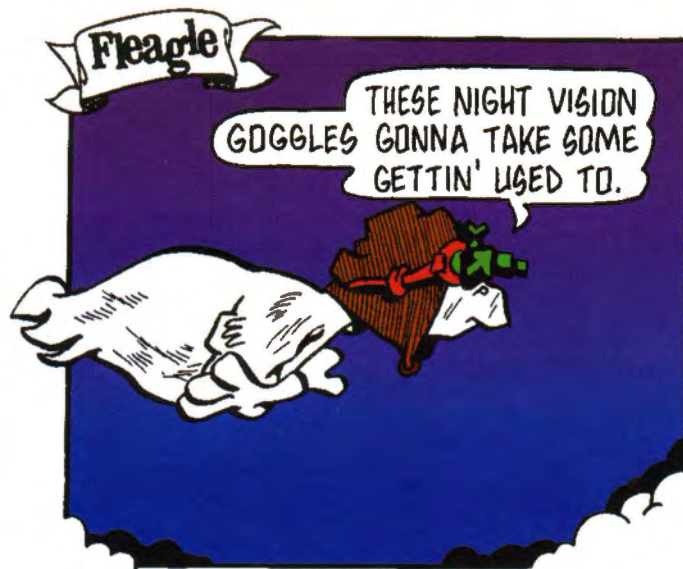
new Ford Bronco, on one of those narrow muddy roads at less than 35 miles per hour when I lost control of the truck.

I was trained to drive in those conditions, and I reacted appropriately, but it was too late — the truck was headed for a ditch and I could not stop the momentum. It was like driving on ice. I felt the truck roll over once, then again, and continue sliding on its roof across the ditch and into a

on my portable radio and made notifications.

I literally walked away from the accident. I returned to the base to find out my baby was fine and that my only injury was a bruise where the seat belt latch had been.

When they brought the truck back to base, it was a tangle of metal. The roof was caved in, the passenger side was crushed, the windshield was blown out



Aircraft Notes

The combination of winter weather and returning from the holiday break in flying continuity always makes January a daunting month for flight safety.

The added burden of performing or preparing for deployed operations further complicates this first full winter month of FY02.

Training like we fight and fighting like we train is as important now, and often more challenging, than ever before. The beginning of this new year is a perfect time to reflect on our duty to know (and follow!) the rules that govern how to do things right -- lead by example.

Weapons Notes





We continued to experience great stats this quarter.

There was one Class B that was a result of a drone mishap during testing.

Keep up the good work!





Aircraft

As of November 30, 2001

8 AF	
9 AF	
12 AF	
AWFC	
ANG (ACC-gained)	
AFRC (ACC-gained)	
Aircrew Fatalities	

Ground

As of December 5, 2001

FY02	Class A Fatality	Class A Injury or Equip.	Class B	Class C
8 AF		0	0	20
9 AF		0	0	11
12 AF		0	0	24
DRU		0	0	3

Weapons

As of November 30, 2001

	Class A	Class B	Class C	Fatalities
8 AF	0	0	0	0
9 AF	0	0	0	0
12 AF	0	0	0	0
AWFC	0	1	0	0
ACC Totals	0	1	0	0

Class A - Fatality; Permanent Total Disability; Property Damage \$1,000,000 or more
Class B - Permanent Partial Disability; Property Damage between \$200,000 and \$1,000,000
Class C - Lost Workday; Property Damage between \$20,000 and \$200,000

* Non-rate Producing

Ground Notes

So far this fiscal year, there has been a 20 percent increase in Class A mishaps over the same period in FY01. All of the Class A mishaps this year were fatalities. In the previous year, only half of the Class A mishaps were fatalities.

Of the two motor vehicle fatalities, one did not use seat belts and was also DUI.

Since the seat belt initiative began on Oct. 10, 2001, there have been 11 motor vehicle mishaps and seat belts were used in 10 of those mishaps. The one not wearing a seat belt resulted in a fatality.

This
New Year's
Eve ...
Resolve
not to be
a
Statistic!



B-1



HH-60



QF-4



F-16



Fatality

Patriotism was the driving force behind a project designed by local residents to thank the military people at Offutt Air Force Base, Neb. Ten employees from Wal-Mart in Council Bluffs, Iowa, plowed the words "Freedom! Thank You!" into a field that lies in Offutt's flight path. Each letter is 125 feet tall and 75 feet wide. "We wanted to say thank you in a big way," said Chris Shotton, store manager.



Photo by Sgt. Jerry J. McMillan