

The Combat EDGE

July 2001



Night Flying

Checklist for Success

The Combat EDGE

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IT'S UP TO YOU

We are well into summer and we are all having fun. I am planning on taking my RV to Cape Hatteras for the Fourth of July. I plan to have lots of fun while I am there, and I plan to return safely home to Langley AFB. There are a number of reasons why I want a safe return: (1) my family needs me — and they count on me to be smart, (2) my workmates want me back at work — I assume, (3) the Air Force is counting on me and (4) my country believes in me and expects me to be responsible and careful with a valuable national asset ... me. Ultimately, there is an even bigger reason to return safely. I want to live my life in full and without bodily damage.

During these 101 Critical Days of Summer, most of us will be traveling or having fun locally. Remember that fun has risk associated with it. I highly endorse fun. We all need it to take the edge off the tough realities of life. But realize life will become tougher if you lose an eye or a limb due to reckless fun — or tougher yet for your loved ones — if you die. No one ever intends to be injured when they are having fun, but many people suffer serious injury because they did not evaluate risk properly.

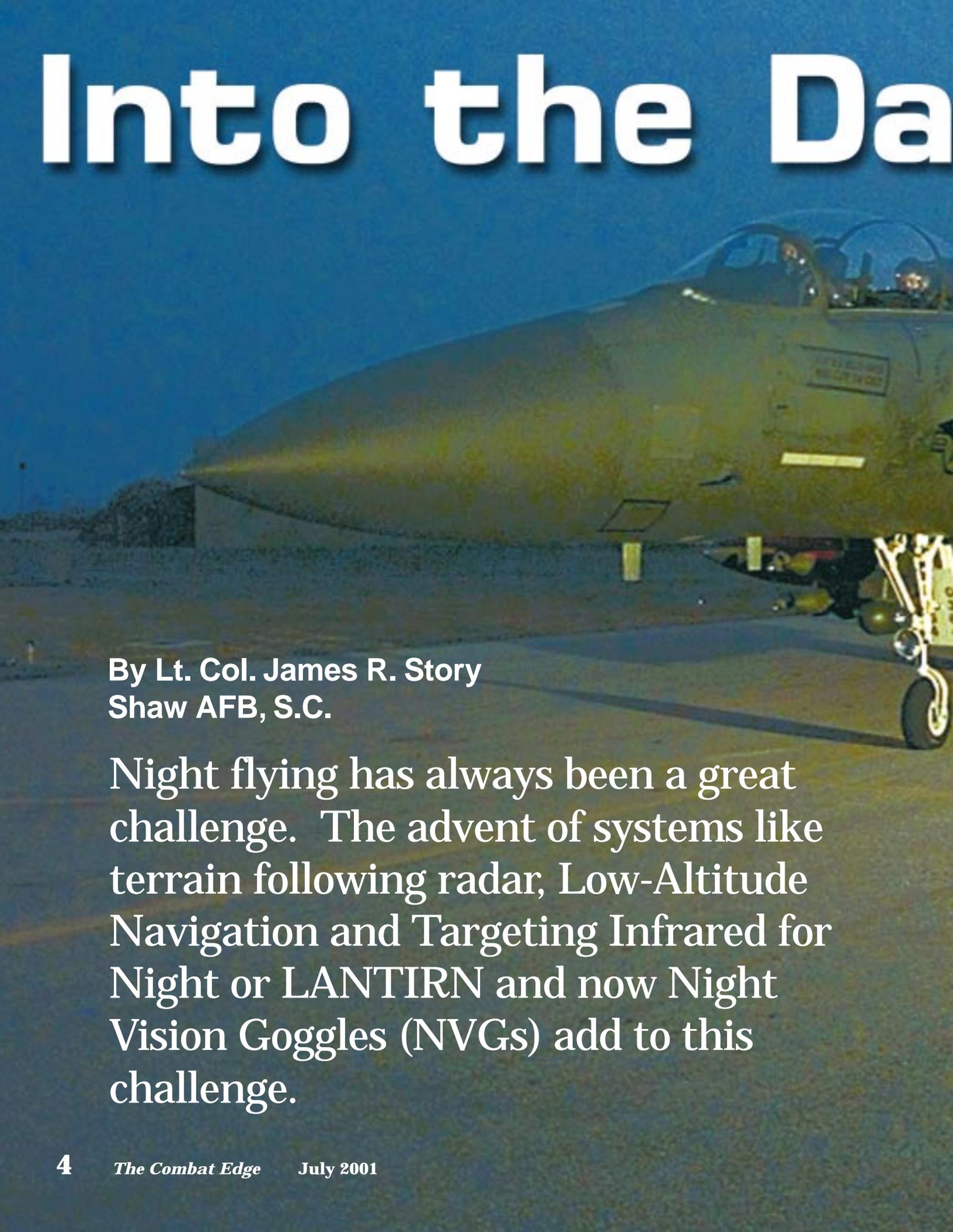
Normally, most people properly evaluate the associated risks of their activities, but some people fail to take steps to reduce or eliminate those risks. They know better, but do not act on that knowledge. An example is the guy who drives his all terrain vehicle parallel along a steep hill. This guy knows there is a significant risk that he may roll down the hill, but continues to traverse the side of the hill because he does not have the discipline to act on this knowledge. He knows he should look for an alternate route where the slope is less risky, but he is having too much fun or in too much of a hurry or too fatigued from playing all day to consider the alternatives.

I encourage you to have fun, but not so much fun that you accept unnecessary risk. Remember, your fun is not complete until you are safely home. A lot of people are counting on you to act on what you know is the right thing to do. But, ultimately, you must count on yourself to do the right things to return safely — it's up to you.



Col. Greg "Vader" Alston
ACC Chief of Safety

Into the Da



By Lt. Col. James R. Story
Shaw AFB, S.C.

Night flying has always been a great challenge. The advent of systems like terrain following radar, Low-Altitude Navigation and Targeting Infrared for Night or LANTIRN and now Night Vision Goggles (NVGs) add to this challenge.

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USAF Photo

Concerns about the degree of this challenge increased in 9th Air Force when news hit the streets that Class A and B night mishaps almost doubled in Fiscal Year 2000. When faced with numbers like these, leadership started asking for reviews of some of the following night flying basics: human factors, bird strike hazards, NVG operations, transition to landing/braking techniques and crew/flight coordination. This is not a comprehensive list so I would encourage every pilot out there to go a step further and evaluate night specific problems unique to your platform and mission.

Human Factors

Transitioning from a day schedule to a night one is not an easy feat for the human body — at least not for mine. It takes the body approximately a week to adjust fully to a night schedule. It is a good idea to prepare yourself as much as possible beforehand by minimizing distractions at home and attempting to adjust early. You should also be aware of the increased fatigue associated with this transition. Another factor is the increased demand on your

sensory faculties since normal visual cues are not available. Finally, there is the need to prepare yourself mentally for a night mission. Be sure to increase your flight preparation and cover normal mundane items in more detail. Cockpit resource management is critical at night.

Bird Strike Hazards

Birds are just as destructive and deadly at night as they are during the day and they do fly at night. The peak migratory seasons are March through May and September through November. Large migrations are weather dependent and can occur earlier or later in the season. The greatest movement of birds in the southeast usually occurs at twilight and early morning hours. At Shaw AFB, I have noticed large flocks of small birds, but each location has their unique species with their unique habits. To mitigate this hazard, use the Avian Hazard Advisory System (AHAS) or Bird Avoidance Model (BAM), and get advisories from earlier flights. It is also important to use Air Traffic Control (ATC) and the Supervisor of Flying (SOF) to pass

current bird conditions to subsequent flights. If your

well as the weather.

NVG Operations

As the fighter world transitions to NVGs, it is helpful to remember that training and currency does not always equal proficiency. Supervisors should evaluate the experience levels of crews and flights, and tailor the mission accordingly. Assess the upgrade syllabus and ensure it meets your objectives. Cockpit lighting continues to be a problem during night operations. Of special concern are the squadrons with different types of cockpit lighting. It is critical for all pilots to be aware of goggle limitations, depth perception, blossoming and reduced acuity.

Landings

Night landings continue to challenge all pilots. Reduced ambient light or the “black hole” effect is still prevalent at many locations. This is especially true at remote locations overseas. Lack of visual cues will cause pilots to land short. Reduced visual cues, aircraft landing lights and speed also give pilots the perception of ground rush, which usually results in hard landings. Use precision approaches at night until you are in a safe position to transition visually. Use all cockpit aids, airfield aids and ATC

Birds are just as destructive and

late afternoon flight slips into evening, ensure you get an update on the bird condition as

to assist with the landing. It is a good idea to have a rule of thumb to determine stopping distance and to be especially aware of runway environmental conditions at night



USAF Photo



Pilots from the 78th Fighter Squadron, Shaw AFB, S.C., get their step briefing from A1C Gina Duncan, Flight Management, in support of an AEW. (Photo by SSgt. David G. Shoemaker)

Flight Coordination

Crew and formation responsibilities are more critical at night. Ensure you give and/or receive an in-depth night briefing. Briefings need to cover more than just the “standard” items. Do not “assume” anything of another pilot or crewmember based on his or her experience level. A pilot or crew may have lots of hours, but currency may not be recent. Emphasize transition phases of

Night flying mishaps were not the only area of concern for 9 AF leadership. During a recent mishap, the number two aircraft of a formation flight collided with a small general aviation aircraft during a descent to low level. Some general lessons can be learned from this tragic experience.

- Ensure you do a thorough job of flight planning.
- Be aware of obstacles and airspace in the immediate vicinity of your route.

- Make sure you are employing the “see and avoid” technique at all times. Even though you are under ATC control, you are still responsible for avoiding other aircraft and obstacles. Remember ATC has limitations and, just like you, they make mistakes.
- Avoid the co-pilot syndrome, which can occur even in single-seat fighters. This is when you are so comfortable

deadly at night as they are during the day and they do fly at night.

flight at night, i.e., refueling during low-level operations or night range missions. Also re-emphasize cockpit management and how it relates to mission requirements.

- Be sure to task prioritize for each phase of flight, which means perform the correct action at the correct time. We only have so many brain bytes to use at one time.

with your Pilot-In-Command (PIC) or flight lead that you will follow him anywhere and trust his decisions without question. DON'T! If something does not seem right,

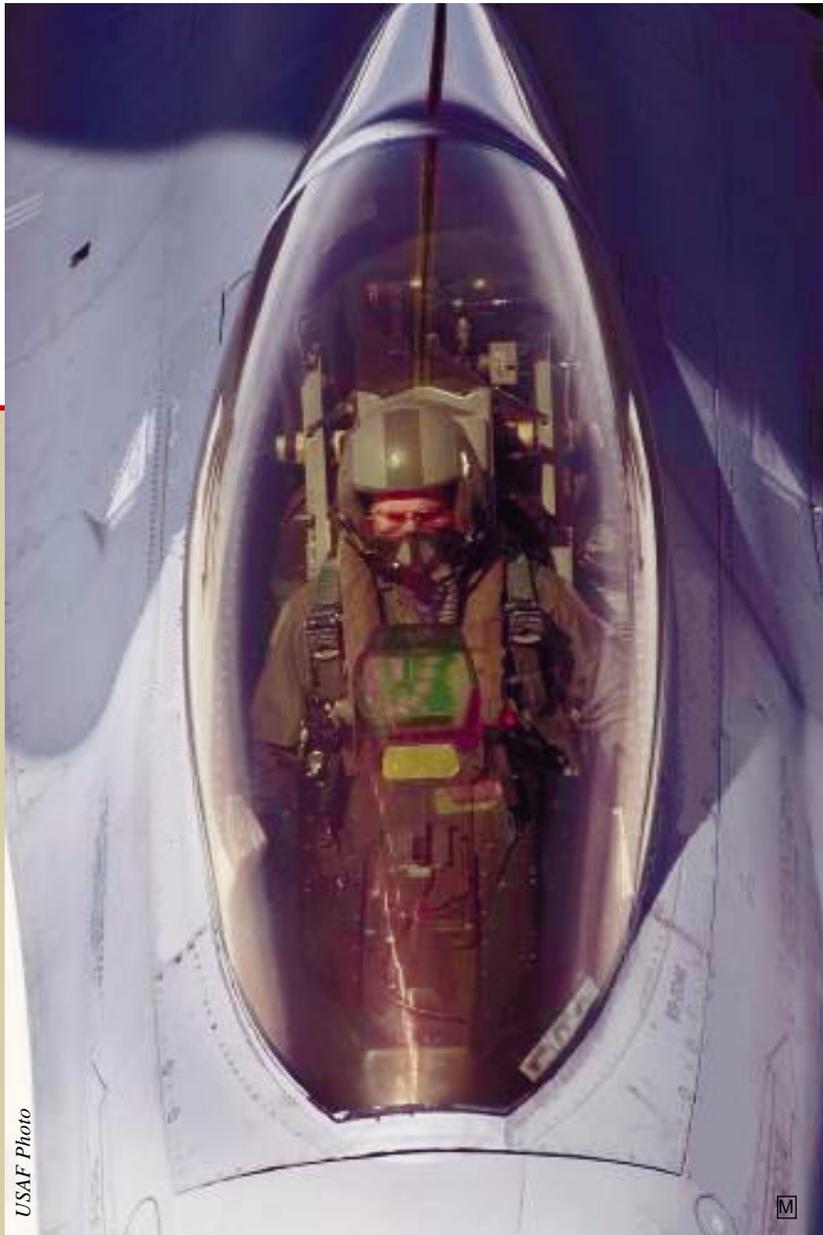
speaking up. You can always knock-it-off and discuss the issue back in debrief.

- For PICs, instructors and flight leads, know your re-

sponsibilities. You are placed in these positions because of your experience, judgment and leadership. Assume the responsibility and ensure the

mission is planned appropriately and the right decisions are made in a timely manner.

There was a second mishap that also brought several other areas to the leadership's attention. When flying off station, ensure you receive timely weather updates. Crews should always reference the Flight Information Publication (FLIP) and the In-Flight Reference supplement when flying cross-country or participating in a major deployment. Be sure to double-check with the ap-



USAF Photo

accident. The F-16 pilot, call sign Ninja 2, ejected and sustained minor injuries. Both aircraft were destroyed in the accident.

At the time of the accident, Ninja 2 was part of a two-ship formation preparing to begin a surface-attack training mission at the Avon Park Air Force Range. The Cessna had taken off from Sarasota-Bradenton International Airport. The other F-16, call sign Ninja 1, was not damaged in the accident and returned safely to Moody Air Force Base, Ga.

Air Force investigators identified two causes of the mishap. First, Ninja 2 and Cessna 829 failed to “see and avoid” each other in

F-16 Accident Report Released

LANGLEY AIR FORCE BASE, Va.— Air Combat Command determined that a critical combination of avionics anomalies, procedural errors and individual mistakes — on

the ground and in the air — led to the Nov. 16, 2000, midair collision between an F-16 and a Cessna 172 near Bradenton, Fla.

The Cessna pilot, call sign Cessna 829, was killed in the

sufficient time to prevent the mishap. According to the accident investigation report, Ninja 2 expected Ninja 1 to make a sharp left turn onto a low-level military training route

appropriate base operations about information in these manuals. Some published information in the FLIP was recently discovered to be incorrect. Second, the SOF is the Operations Group Commander's direct representative for flying operations. He is placed in that position because of his experience, judgment and ability to keep the big picture of all flying operations in perspective. His directives should be followed unless a pilot believes the SOF's instructions will place his aircraft in a dangerous situa-

tion. Finally, wings need to evaluate their alternate airfields. Regular visits and memorandums of understanding will assist this relationship. If your alternate airfield is civilian, Navy or joint use, be aware of their limitations. Visit the Federal Aviation Administration (FAA) control tower at your alternate airfield and ensure the controllers are aware of the limitations of your aircraft. A good working relationship with the FAA and your alternate airfields will reap dividends when you really need

their assistance.

While mishaps can be costly in many unpleasant ways, they do serve to remind us of the things that we can do better. Flying — especially night flying — will continue to escalate the demands placed on airmen; however, thorough preparation, training and proficiency are the keys to increasing the competency of our combat pilots. When it comes to night flying, do not take anything for granted. Make the extra effort and you will be a better and safer aviator. ►

at any moment. His immediate focus was to see and avoid Ninja 1. Just prior to the collision, Ninja 2 saw a white flash, but didn't realize it was another aircraft. There was conflicting testimony as to whether Cessna 829 saw the F-16 and attempted to maneuver his aircraft prior to the collision.

Second, Tampa air traffic controllers failed to transmit a safety alert to Cessna 829 when their radar system generated "Conflict Alert" warnings, indicating that two aircraft were in danger of a collision. Investigators determined that if the controllers had issued a safety alert to the Cessna when the first Conflict Alert began, it is likely the pilot would have had time to maneuver to avoid the collision.

In addition, investigators identified three factors that substantially contributed to the accident. First, the F-16 flight lead, Ninja 1, lost situational awareness and descended under Visual Flight Rules into Tampa Class B airspace without proper clearance from Tampa Approach.

Ninja 1 was required to either avoid entry into Class B airspace or request permission from Tampa Approach to enter.

Second, Ninja 1's aircraft developed a position error in its navigation system that the pilot failed to recognize. The aircraft was actually 9 to 11 miles south of where the pilot believed it to be, based on his inertial navigation system reading. As a result, Ninja 1 unknowingly navigated his flight into Sarasota Class C airspace without the required communications with air traffic controllers.

Finally, investigators determined that Ninja 1 had made an inadvertent cursor input to his navigation system during the mission. The pilot failed to recognize the error when he switched into ground attack steering mode. As a result, he unknowingly navigated the flight further off course. If Ninja 1 had noticed the error when he switched to the ground attack steering mode and corrected it, investigators believe the collision could have been avoided.

Mishap Definitions:

Class A:

- Fatality
- Permanent/total disability
- Property damage greater than \$1,000,000
- Destruction of aircraft

Class B:

- Permanent/partial disability
- Inpatient hospitalization of three or more people
- Property damage greater than \$200,000, but less than \$1,000,000

PPE:

The First Line of Defense

By MSgt. Scott M. Eck
Duke Field, Fla.

Photos by TSgt. Jack Braden

You are probably asking yourself, “What is PPE?” Well, personal protective equipment, PPE for short, is what we wear to protect ourselves from injury.



For example, football players wear pads and a helmet to protect them when they play football. Construction workers wear hardhats, eye protection and various other devices to help them do their job. For motorcyclists, PPE can mean the difference between some bumps and bruises or serious injuries. In some cases, it can mean the difference between life

not see, you cannot ride. A face shield attached to the helmet offers the best protection. If you choose to wear goggles or sunglasses, make sure they are impact resistant and wrap around to completely cover your eyes.

Hard-soled boots or shoes that completely cover the ankle offer protection against foot and ankle injuries. Make sure your foot-

summer months, they can help you keep a better grip on the handgrips when your hands begin to sweat from the heat. And no matter the time of year, gloves will protect your hands during that unfortunate fall.

Long pants and a long sleeve shirt or jacket will protect your legs and upper body accordingly. Remember to wear garments on and off base

for all active-duty personnel and reserve members in status. Civilian

employees are required to wear a reflective vest while operating a motorcycle on base.

Active duty and reserve members in status must wear all required PPE on and off base. Civilian employees must wear all required PPE while on base and when on official duty off base. ►

...it can mean the difference between life and death

and death. Let's take a look at how PPE can protect the motorcycle operator.

Many experts agree that the helmet is the most important piece of protective equipment a rider can wear. The helmet protects your head against injury from flying objects, windblast, cold and impact with objects. There are many styles of helmets available, but for maximum protection, experts recommend a full-face helmet. No matter what style of helmet you choose, make sure it is Department of Transportation (DOT), Snell Memorial Foundation or American National Standards Institute (ANSI) certified.

Eye protection is also crucial because if you can-

wear has a sturdy, oil resistant lug sole. These provide a good grip on the footpegs of your bike as well as grip the road when you put your feet down.

Gloves offer protection year round. In the winter, they keep your hands warm and comfortable. During the



Choosing A Helmet

A helmet is the single most important piece of motorcycle safety equipment you can buy. Many riders choose not to wear helmets, thinking that as experienced riders they do not need a helmet. Even those who have ridden motorcycles many years can never be certain when they will encounter a situation on the road that is beyond their control. The majority of multi-vehicle motorcycle crashes are caused by the other vehicle operator. The following guidelines will assist you in choosing a helmet that offers the most protection without sacrificing comfort or style.

There are helmets being sold that do not meet the Department of Transportation (DOT) standard and do not provide the level of protection you need when you are riding your motorcycle. Look for the DOT symbol on the outside back of the helmet. Then, look for a label inside the helmet stating the manufacturer's name, month and year of manufacture, construction materials, helmet model and size and owner information. A complying helmet will have both labels.

Helmets that comply with federal safety standards will have a firm polystyrene (styrofoam) inner lining of about 1 inch and will weigh about 3 pounds. They will also have sturdy chinstraps with solid rivets. Safe helmets will never feature spikes or other protruding decorations.

Full-face helmets offer the most protection in a collision. Plastic

face shields protect you from wind, dust, rain, insects and some road debris thrown up from cars. If you buy a helmet without a face shield, be sure to wear goggles to protect your eyes.

Remember, a windshield is not an adequate substitute for a face shield or goggles.

Always try on a helmet before you buy it as each brand of helmet fits differently. Your helmet should feel snug and it should not turn freely around your head.

If you are involved in an accident, plan on replacing your helmet as it probably absorbed some impact shock. As a general rule, most helmet manufacturers recommend replacing your helmet every 2-to-4 years. If you notice any signs of damage before then, replace it sooner.

Helmet Care Tips

With the helmet being the most important piece of motorcycle personal protective equipment, you need to ensure it is properly taken care of. The following tips were gathered from a variety of sources and are not all inclusive. Be sure to follow the manufacturer's instructions that came with your helmet.

- When cleaning the outside shell, use the mildest soap as recommended by the manufacturer of your helmet. Avoid any petroleum-based cleaning fluids, especially if you own a polycarbonate helmet as it can cause the helmet to deteriorate

and lose some of its protective value.

- Keep your face shield clean. Normally, mild soap and a soft, lint-free cloth will do the job. Inspect your face shield for scratches and replace if necessary.

- Do not store your helmet near gasoline, cleaning fluids or excessive heat. Helmet materials can react chemically to these items or situations and damage may occur to the helmet that is not visible to the eye.

- Never hang your helmet on the motorcycle's turn signals, mirrors or backrest. The inner liner can be easily damaged. Additionally, further damage to the outer shell can occur if the helmet falls off of the bike and impacts the ground.

- Never paint or apply additional stickers to a helmet as it can hide helmet damage.

- Never drill holes in a helmet (to install a speaker system) as the drilled holes may affect the helmet's structure.



Compiled from the National Highway Traffic Safety Administration

Disinfectants Corroding Landing Gear

By 2Lt. Danielle Burrows,
Davis-Monthan AFB, Ariz.

The spraying of chemical disinfectants onto landing craft in Europe in order to curb the spread of foot and mouth disease could lead to corrosion in the metal and catastrophic failure, according to Commodities Directorate lead engineers Sandra Fitzgerald and Doug Wisner.

The problem has arisen because nations spraying the landing gear are using chemicals cleared by the U.S. Department of Agriculture to kill foot and mouth disease, but not cleared for the aircraft by the U.S. Air Force, according to Fitzgerald.

“Landing gear materials are really sensitive to certain chemicals. What we’re finding is, in general, it requires extreme pH values to kill the foot and mouth virus and we know pH levels — either very high or very low — are dangerous to landing gear. The Air Force corrosion office, assisted by the folks at Brooks AFB, are testing approved landing gear cleaners against the virus,” Wisner said. “What we suspect may happen is the gear needs to be submerged in solution for about 40 minutes to make sure the virus is dead. And that is just not going to happen.”

The threat of the virus to European livestock is immense and has resulted in the culling of approximately 2.5 million animals in England, according to Cable News Network. The virus is so

contagious it can be transported through any surface it touches, such as shoes, dirt and aircraft tires.

Impact on the landing craft could be profound and long lasting, with the full effects unknown for several years, according to Wisner. The most immediate threat is hydrogen embrittlement, which, according to Wisner, can cause a quick and catastrophic failure. Another concern is stress corrosion cracking that can occur over time. Aircraft with carbon brakes could experience oxidation and failure of those systems.

To take a proactive stance, protect landing gear by ensuring it’s properly painted, masking the landing gear and lightly spraying the tires. “Unfortunately, that is not always being done. Sometimes the whole plane is being sprayed. So we’re asking that they take a high volume of water at low pressure and douse the whole gear for quite a while. Then when the plane returns to its home base, clean it again and thoroughly inspect it.

“We’re also documenting every aircraft that is being sprayed — what it was sprayed with, how long it was left on and when it happened. That way, in case something happens or starts to happen, we can get all those landing gears off the planes that have been sprayed in a similar manner.

“We’ve already seen some kind of failure in the commercial world. Boeing aircraft were sprayed with sodium hypochlorite (chlorine bleach) for the purpose of curbing the spread of foot and mouth disease, which resulted in the failure of the axles by stress corrosion cracking from the corrosion pits that resulted from the chlorine bleach attack,” said lead engineer Clint Forrest.

Test Your Electrical Hazard Safety Knowledge

By SSgt. Fred D. Gamblin, Jr.
Eglin AFB, Fla.

Every supervisor needs to make sure employees do not accidentally create electrical hazards. Here is a true or false quiz that will test your knowledge of electrical safety rules.

1. Items cannot be stored within 30 inches of electrical equipment that operates at less than 600 volts, such as circuit boxes and outlets.
2. It is OK to break off a ground plug if you need to fit the plug into an ungrounded outlet.
3. Electrical cords can be temporarily attached to building surfaces, run across doorways, aisle ways; through holes in walls and where other employees are working.

Firemen Train in New Simulator

By 2Lt. Danielle Burrows,
Davis-Monthan AFB, Ariz.

Air Force people are no strangers to simulation training. Many pilots experience their first “rides” in million-dollar flight simulators that allow them to learn valuable lessons without getting burned. Davis-Monthan firefighters also know about the dangers of getting burned. And with a little simulation of their own, they now learn to face those dangers more safely.

The 355th Wing’s fire protection flight recently purchased and set up a structural fire-fighting simulator in their training area. The mobile, multi-unit trainer is a self-contained, two-story unit, with moveable walls and a non-toxic smoke generator that adds realism to the firefighters’ training. “This unit has been carefully designed around keeping the firefighter safe, while providing realistic live fire training through a variety of scenarios,” said Randy Schryer, Davis-Monthan’s Fire Protection Flight assistant chief of training.

“During any live fire scenario, if anything out of the ordinary occurs which violates or creates a safety concern, either the safety officer or the controller re-

leases the kill switch, an immediate shutdown occurs, and the exhaust fans remove heat and smoke from the trainer,” he said. “Additionally there are three emergency shutdown switches located in the interior that any of the firefighters can activate if they observe a safety problem.

“In our old facility, you had to extinguish the fire regardless of the circumstances. Now, within seconds you have a safe environment,” Schryer said.

Prior to this, the fire protection unit used a two-story cement block burn house, where they ignited wood, hay, straw or tires. But after several years, the facility was condemned because of the damage caused by excessive heat stress.

The new unit uses propane, which burns clean and is contaminant-free. It also has two movable walls that can be used to change the floor plan during live fire training and while conducting search and rescue training. The simulator will be

used several times a month to train the 82 firefighters on base in structural fire simulations, search and rescue in a smoke-filled environment, ventilation of smoke and heated gases, ladder drills and confined space situations, among other scenarios, according to Schryer. This new training device allows the firefighters to train in more realistic situations under safer conditions, and safety is the concern, Schryer said.



Amn. Ken Hannah and Kevin Baird, 355th Civil Engineer Squadron firefighters, train in the new fire-fighting simulator. It provides training for the 82 firefighters on base. (Photo by A1C. Latonia Brown)

4. Regular safety inspections of cords, ground wires, safety equipment and casings on portable power tools are part of your job.
5. Electrical safety regulations are the same whether or not employees are likely to encounter the hazards in their daily jobs.
6. Supervisors are required to mark all electrical fuse, switch and circuit breaker boxes with correct voltage.

1. T: OSHA requires electrical equipment of 600 volts or less to be given clearance of at least 30 inches in each direction.
2. T: Grounded devices will have a three-prong plug unless equipment is double insulated; then a two-prong plug is acceptable.
3. T: Walkways, aisle ways and corridors must always be kept clear of electrical cords and other trip hazards unless the area is cordoned off from other workers (i.e., during renovations). Flexible cords and cables shall be protected from accidental damage.
4. F: Cords will be inspected by the user to ensure they are of proper size and rating and that they are not damaged. Damaged cords will be replaced or repaired.
5. F: Electrical safety regulations are tougher when other workers are likely to encounter these hazards. Of course, you should always practice good electrical safety regardless of employee exposure. Exposed wires must be locked away or be in places where non-electricians will not run into them and get hurt.
6. F: Mark fuses and switch boxes to identify what they control unless their purpose is evident.

Answers to the quiz:

Fowl Research Specialists Investigate Bird Strikes

EGLIN AFB, Fla — As an Eglin F-16 pilot and his backseater headed for their third pass on a weapons delivery sortie here recently, a large gray indistinct shape suddenly hit the aircraft. Luckily, Col. Kevin Burns, 46th Test Wing vice commander and pilot, and Capt. Anthony Thomas, 46 TW flight test engineer, maneuvered their jet and made an emergency landing at nearby Duke Field. One of a flock of double-crested cormorant birds had struck the screaming aircraft.

This isn't an unfamiliar story to pilots. In fact, Air Force records show that there have been 38,000 bird-aircraft strikes, which have killed 33 aviators, destroyed 30 aircraft and caused more than \$500 million in equipment damage since 1985. Eglin reports more than two damaging bird strikes each year.

To strike back, bird research specialists Carla Dove, Christina Gebhard and Brian Schimdt from the Smithsonian Institution, a Washington, D.C.-based natu-



ral history museum that houses more than 650,000 bird specimens, recently teamed with Eugene LeBoeuf, Kirtland Air Force Base, N.M. bird strike scientist with the USAF Bird Aircraft Strike Hazard Team or BASH. Eglin's Jackson Guard Natural Resources Division hosted these experts while they collected and identified birds commonly hit during bird strikes to determine ways to reduce the number of strikes.

"We decided to visit Eglin because it's situated right in the middle of two major bird migration corridors, the Mississippi River and the Atlantic Flyways. Identifying species of birds from feather remains provides essential data needed to implement habitat management plans on airfields and provide warnings to pilots of bird strike dangers," Dove explained. "Furthermore, knowing the weight of a bird species helps engineers design windscreens and engines that are more resistant to damage from bird strikes."

However, Dove said research on birds cannot be successful without the Air Force flight safety offices' help and urges all safety and maintenance people to preserve all types of bird remains and send them to the Smithsonian Institution as soon as possible.

"Providing even the tiniest bit of feather evidence may be crucial to identifying the bird that actually hit the aircraft," Dove said.

Recalling Dangers at Home

*By SrA. April D. Blumer
Pope AFB, N.C.*

How many parents, given the proper knowledge, would knowingly put their family in harm's way? How many fathers would buckle their child into a car seat that had a defective harness? How many wives would buy their husbands a scuba regulator whose first stage spring is known to break, causing restricted airflow? Albeit unintentional, annually there is an average of 22,600 deaths and 29.6 million injuries related to consumer products under the jurisdiction of the U.S. Consumer Product Safety Commission.

The CPSC is an independent, federal regulatory agency designed to help keep American families safe by reducing the risk of injury or death from consumer products. "Many people are not aware the items were recalled," said Ron Finchum, 43rd Airlift Wing ground safety manager. "Recalls are not publicized enough and stores do not keep records of small-ticket purchases."

The base fire department recently participated in the CPSC-sponsored Recall Round-Up 2001 to help increase awareness of hazardous products consumers may have in their home. "[Since the Round-Up], we have had calls concerning halogen torchiere floor lamps, novelty lighters, Hotpoint dishwashers and hair dryers," said Douglas Wise, 43rd Civil Engineer Squadron fire inspector. "Personnel were advised to call the toll free number on the recall notices for instructions on what to do with the items and where to turn in the items."

According to Finchum, the most common recalled items still being used in homes are small appliances such as coffee makers and irons. "There have been documented reports showing use of recalled items starting fires, resulting in lost homes," said Finchum. Recalled items are not limited to well-known companies such as Firestone and General Electric Appliances Company. Recalled items span the range of producers, from those who make hair dryers to those who mass produce batteries.

For a list of items currently begin recalled or to report an unsafe product, log on to the CPSC web site at <http://www.cpsc.gov/> or call 1-800-638-2772.

Three Injured in Tower Explosion

By SSgt. Stacey McCausland

ESKAN VILLAGE, Southwest Asia — Three Eskan Village workers assigned to clean tower 42-10 were injured in an explosion May 6. The victims, natives of Bangladesh and India, were using a lacquer paint thinner to strip the floor of a room when their electric buffer produced sparks and caused the vapors to explode, said Tech. Sgt. Richard Verduzco III, 320th Expeditionary Fire Department. “There was not adequate ventilation in the room,” he said.

According to Staff Sgt. Thomas Kelly, 320th Expeditionary Safety Office, “Once the vapor concentration had reached above the 10-percent lower-explosive limit, conditions in

the room were extremely dangerous.” He added, “When the individual pulled the trigger to activate the buffer, the spark from the buffer’s generator provided the ignition source needed to cause the explosion.”

Within minutes of the explosion, personnel from the fire department, 320th Expeditionary Security

Forces Squadron, 320th Expeditionary Explosive Ordnance Flight, 320th Expeditionary Safety Office and 320th Medical and Bioenvironmental Flights responded to the scene to assist the victims and to ensure the safety of the scene. “Medical response personnel stabilized and transported the injured to the medical clinic, where all clinic personnel were in place awaiting the arrival of the patients,” said Tech. Sgt. Joe Lujan, 320th Expeditionary Medical Flight. Once the patients received treatment



This accident scene is where three people were injured May 6 in an explosion while cleaning a facility at Eskan Village, Southwest Asia. (Photo by SSgt. Stacey McCausland)

and were stabilized, they were transported to National Hospital in Riyadh.

Trigger Padlocks Recalled

WASHINGTON, D.C. - In cooperation with the U.S. Consumer Product Safety Commission (CPSC), Sturm, Ruger & Co. Inc., of Southport, Conn. is voluntarily recalling 1.2 million padlocks and 800,000 cable gun locks that bear the “Ruger” name. The padlocks can be opened using keys other than those originally provided with the locks and the cable locks can be opened if struck with force potentially allowing unauthorized access to a firearm.

Ruger is aware of three incidents where a consumer was able to open a padlock without the use

of its designated key. No injuries have been reported.

Lockable boxes using these padlocks were shipped by Ruger with its pistols and revolvers from 1987 until 1995. The red cable locks were shipped with Ruger rifles and shotguns from 1998 until March 2001. These locks were distributed nationwide.



Ruger began its voluntary lock replacement program in March 2001. Consumers with the recalled padlocks and cable locks should send them to Sturm, Ruger & Co. Inc., Dept. LK, 411 Sunapee Street, Newport, NH 03773 for a free replacement lock. For more information, call Sturm, Ruger & Company, Inc. toll-free at (888) 317-6887 between 8 a.m. and 6 p.m. ET Monday through Friday, or visit Ruger’s website at www.Ruger-Firearms.com.

Pilot Safety Award of Distinction

On the night of Dec. 11, 2000, Maj. Daniel Hampton and Capt. Eric Sparks were number three and four in a four-ship of F-16CJs. The flight departed on a two v. two, air combat training sortie. The weather ceiling was broken from 1,000 to 3,000 feet and layered above 10,000 feet. After the tactical portion of the mission, the flight began a four-ship radar trail recovery to the Instrument Landing System (ILS) at Shaw AFB for full stop landings. During the descent, the automated terminal information system reported a 700-foot broken ceiling. Radar Approach Control informed the flight that weather conditions were deteriorating down to ceilings of 350 and 600 feet. Sparks flew the ILS down to his minimums with Hampton in radar trail. They could not break out of the weather. Sparks initiated a missed approach and both aircraft proceeded to a holding pattern between broken decks to prepare for a divert to McEntire Air National Guard Base. While en route to McEntire, Hampton learned there was a lack of recovery personnel at the divert field and the landing



Maj. Daniel J. Hampton (L) and Capt. Eric D. Sparks
78th Fighter Squadron, 20th Fighter Wing,
Shaw AFB, S.C.

might be delayed. He directed the flight to conserve fuel and hold. While holding, Sparks' aircraft displayed intermittent "Off" flags in his main attitude direction indicator. His aircraft heads-up display also indicated a 90-degree bank angle while the aircraft was in a wings-level attitude. Sparks reported that both of his primary attitude instruments had failed and he had transitioned to standby instrument references. Hampton rejoined on Sparks' aircraft from a 2-mile trail position and initiated a lead change. He directed Sparks to assume a fingertip position and to prepare for a night formation approach at Shaw AFB. Hampton notified the Supervisor of Flying and then led Sparks through the weather on a flawless ILS approach. Both aircraft broke out of the weather at 350 feet. Sparks acquired visual reference with the runway and began his transition to landing as Hampton initiated a go-around and performed another ILS approach. Both aircraft landed uneventfully. The coordinated efforts of these professional aviators resulted in the safe recovery of their aircraft during a malfunction that occurred under extremely adverse conditions — at night and in bad weather. Maj. Hampton and Capt. Sparks are commended for their outstanding performances.

Ground Safety Award of Distinction

TSgt. Kevin Duffy, prior to a 31st Combat Communications Squadron field training exercise, expertly packaged 750 gallons of diesel fuel for air mobility and road transportation. Later, at the deployed location, he inspected all generator connections and ensured all facilities were properly grounded prior to applying power. During the setup of the Wing Operations Center, a half-gallon of fuel was spilled inside the tent while a tent heater was being replaced. Duffy quickly responded to the fuel spill and took immediate action to remove the fuel. He also ensured the tent was adequately ventilated so toxic vapors would not accumulate. His quick actions prevented

significant personal injury and eliminated a fire hazard. Duffy then conducted frequent fire inspections of each facility throughout the remainder of the exercise. He concentrated on placement and serviceability of fire extinguishers near each mobile generator and ensured proper operation of tent heaters by deployed personnel. After the exercise, Sgt. Duffy learned of a safety incident that occurred in another squadron when an internal power supply short-circuited, causing damage when power was applied. Duffy conducted an investigation and determined the cause was due to a reversal of the neutral wiring and the C-phase power. Recognizing a potential problem, Duffy immediately inspected the squadron's 10 remaining power distribution boxes; the inspection revealed no other wiring deficiencies. Sgt. Duffy's initiative has improved the squadron's overall safety awareness associated with deployment operations.

Crew Chief Safety Award of Distinction

On Jan. 9, 2001, an F-15 returned from flight and hot-pit refueling with a piece of metal protruding from the right main landing gear tire. Upon initial inspection, technicians were unable to determine the origin of the foreign object. Later that day, Sgts. Carvin Lawless and Christopher Nolan were training A1C Anthony Delph on the repacking of a main landing gear strut. While disassembling the strut, the three noticed that the strut finger lock assembly resembled the metal found imbedded in the tire earlier. This finger lock assembly ensures the main landing gear tire stays in proper alignment when the gear is extended. Without the lock, the wheel will attempt to steer independently like an automobile tire with a broken tie-rod. They immediately reported their finding to the Squadron Production Superintendent who notified Quality Assurance. This resulted in a fleet-wide, one-time inspection. Less than 1 hour later, another F-15

was found missing its strut finger lock. The keen attention to detail, system knowledge and quick action exhibited by Sgts. Lawless and Nolan and A1C Delph prevented the catastrophic loss of a multi-million dollar aircraft, and, in all probability, saved a pilot's life.



From left to right: SSgt. Carvin A. Lawless, SSgt. Christopher P. Nolan and A1C. Anthony M. Delph, 94th Fighter Squadron, 1st Fighter Wing, Langley AFB, Va.

Weapons Safety Award of Distinction

Sgt. Kerry Alexander's ability to take charge and apply sound judgment led to the prevention of a possible costly mishap. He identified a live violet smoke grenade while certifying a returned munitions residue inspection. He immediately evacuated all seven munitions inspectors, notified Munitions Control of the dangerous unexploded ordnance and enacted the emergency action checklist. While waiting for the emergency response teams, Alexander continued to evacuate 35 nonessential personnel to a safe withdrawal distance of 300 feet as specified in Air Force Manual 91-201 and local operating procedures. Once he safely evacuated everyone, he remained at the secondary entry control point, briefed arriving emergency response personnel on the multiple haz-

ard class divisions in the inspection bays and directed them to the scene. Additionally, after conclusion of the emergency, he assured there were no remaining assets in a similar condition prior to the nonessential personnel returning to duty. His quick action ensured the live grenade was contained before it could explode, possibly exposing his fellow inspection personnel to hazardous smoke and dispersing corrosive explosive residue throughout the four munitions inspection bays. SSgt. Alexander is a credit to the wing safety program.

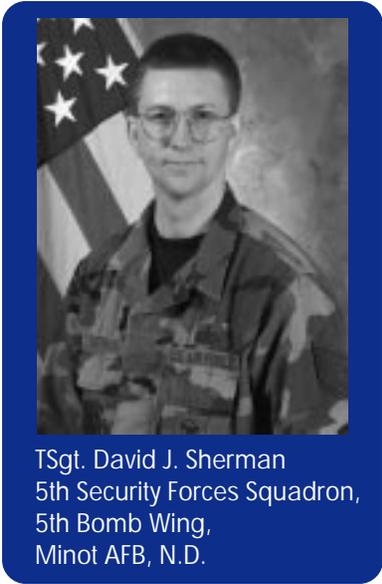


SSgt. Kerry A. Alexander
1st Equipment Maintenance Squadron, 1st Fighter Wing, Langley AFB, Va.

ACC is proud of our Monthly and Quarterly safety honorees

Weapons Safety Award of the Quarter

T Sgt. David Sherman has provided annual nuclear surety and proficiency training for over 350 individuals and consistently tracked and identified trends for all nuclear surety training requirements. He dedicated over 52 hours of his off-duty time to the development of three training enhancement tools and two training validation tools. Sherman created a very successful and popular state-of-the-art, 30-question and answer nuclear surety jeopardy game covering six major areas: Personnel Reliability Program, Air Force Instructions, Nuclear Mishap and Reporting Procedures, Security Requirements, Intrinsic Radiation and General Nuclear Surety Information. In developing a dynamic nuclear surety crossword puzzle, he utilized 22 interactive clues highlighting previous negative testing trends and addressing the most difficult portions of the nuclear surety lesson. Through his testing trend documentation process, negative testing trends are immediately identified and documented, which enables instructors to provide timely and vital feedback on nuclear surety status to current or gaining supervisors. He devel-



TSgt. David J. Sherman
5th Security Forces Squadron,
5th Bomb Wing,
Minot AFB, N.D.

oped a detailed training assessment tool that provides critical data for the unit commander to determine the unit's overall nuclear surety training strengths and deficient areas during nuclear surety spot compliance inspections. His assessment tool covers six critical areas: Nuclear Weapons Surety Program, DoD Nuclear Surety Standards, Personnel Reliability Program, Nuclear Surety Terminology, Intrinsic Radiation and Close-in Security areas. The assessment tool provides raw data to the unit training section, which indicates needed revisions of the lesson plans, tests and other nuclear surety-related material. He also devised nuclear surety training slides that provide real-time images for nuclear surety information association. His lesson plan allows the instructor to conduct follow-up questioning during training. The questions and answers were developed and computer-linked to provide the instructor with a training gauge of student responses to nuclear surety training information. His training initiative was com-

mended as "very innovative and recommended for benchmark" by the 8th Air Force Safety Staff Assistance Visit in March 2001. The final report specifically lauded TSgt. Sherman for exemplary pride and dedication to the nuclear surety program.

Ground Safety Award of the Quarter

As the alternate safety representative for the 34th Combat Communications Squadron, Sgt. Steven Alexander showed intense initiative by completely revamping the squadron's safety program. He started with a 100% review of the squadron's nine separate Job Safety Training Outlines (JSTO) that revealed the need to significantly modify the JSTOs to include shop-specific safety requirements. He then reviewed 120 Air Force (AF) Forms 55, Employee Safety and Health Records, identifying deficiencies

in 67 of the forms. He educated supervisors and personally directed the re-accomplishment of the forms to ensure mandatory training requirements were properly tracked. The new JSTOs and improved Forms 55 now distinguish between training that is "one-time" and training that is recurring. Alexander also completely automated the squadron's safety training tracking system. During the process, he educated the squadron's five flight-level safety representatives on the use of the Core Automated Maintenance System which tracks ancillary training. He cross-referenced the system records against the AF Forms 55 and scheduled personnel for required training before they became overdue. Alexander assisted the squadron's three

building custodians in identifying and correcting several safety hazards within their facilities. Under his supervision, everything from tripping to electrical hazards have been identified and corrected. His enthusiasm and active involvement with the commander's safety program resulted in two "best practices" being identified during the squadron's annual safety assessment. The utilization of "latrine readers," which "advertise" safety issues, won praise throughout the group and is being adopted by several other squadrons to enhance awareness in their units. While modifying the existing "suggestion program," Alexander added a safety twist that fills the gap between the need for an AF Form 457, USAF Hazard Report, and "just a good idea" that may save lives or prevent a mishap. He has also made the unit's Safety Suggestion Program a benchmark program, which resulted in AF Forms

332 being submitted for needed stop signs. Alexander conducts numerous monthly spot inspections, making safety key to mission success instead of an "extra-duty afterthought." Informative e-mails and bulletin boards, interactive training and thorough safety staff assistance visits to the various flights are the secrets to Alexander's outstanding success. Just a year ago, the squadron's annual safety assessment identified a number of areas rated as "does not comply." This year, the 34 CCS won accolades as the "best squadron safety program I've seen in my career" from the 3rd Combat Communications Group Chief of Safety. Sgt. Alexander's exceptional efforts assured the squadron received zero deficiencies. His attention to detail, active involvement and enthusiasm has totally revitalized the squadron's safety program.

ACC Safety is Proud of All Our Nominees

SrA. Michael K. Kallimani
Hydraulic Journeyman
93 MXS, 93 ACW, Robins AFB, Ga.

SSgt. Christopher K. Morgan
Network Engineer, Theater Deployable
Communications
28 BW, Ellsworth AFB, S.D.

Submit your Safety Achievers for awards!
Point of Contact is Barbara Taylor, DSN 574-
8846, Commercial (757) 764-8846, fax 8975;
e-mail: barbara.taylor@langley.af.mil



What's New in Awards

ACC Awards

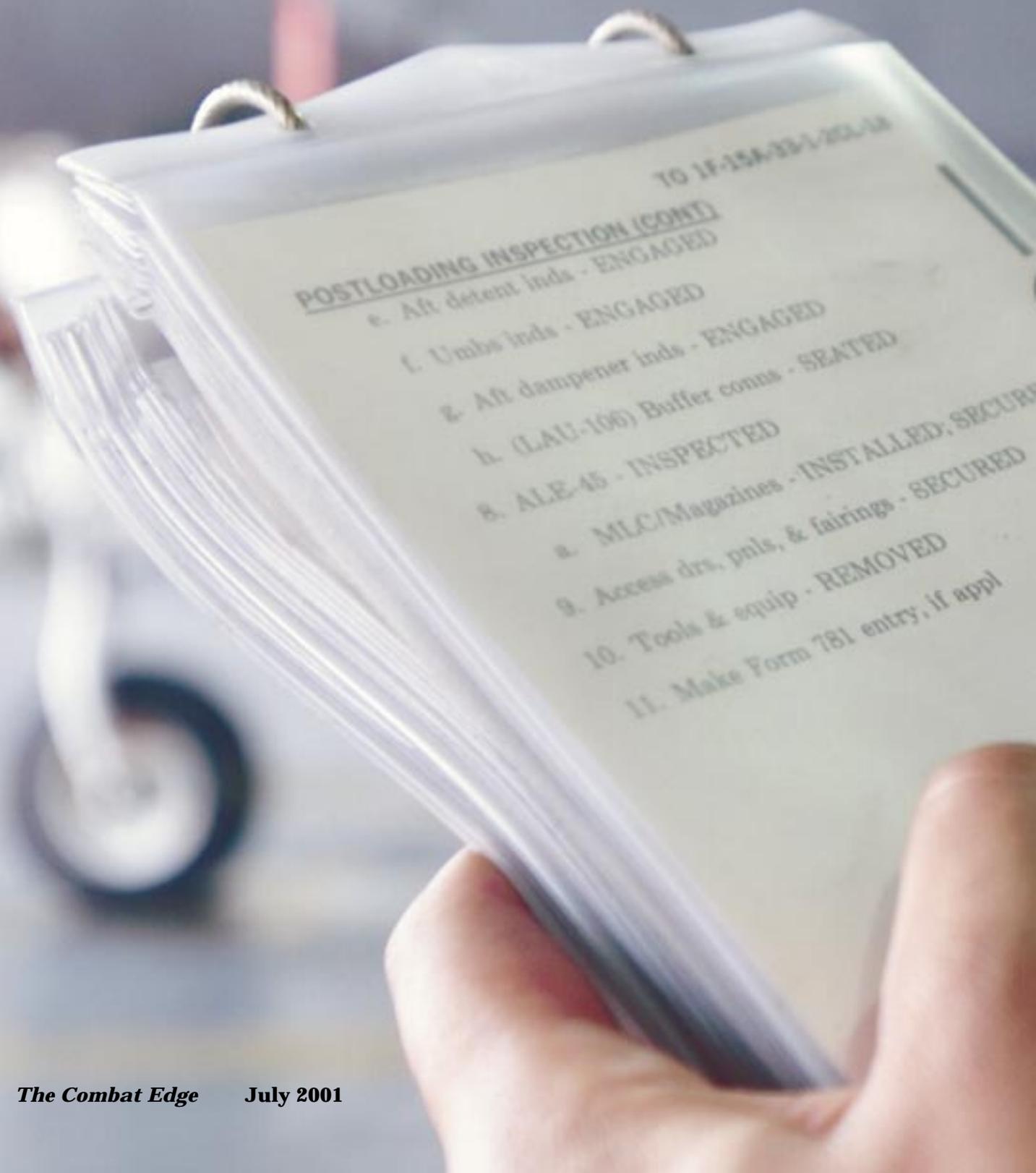
- New Photo Requirements (environmental versus head & shoulder shots)
- AF Form 1206 — "There I Was..." Narrative (1/2 page maximum length for monthly and quarterly awards)
- Recognition For All Nominees & Photograph Credit

AF Awards

- Changes to AFI 36-2833 (AF Safety Awards) are Forthcoming
 - Electronic Submissions Only (e-mail or disk)
 - AF Form 1206 (one-page maximum length, single space)
 - New Criteria for Colombian & SICOFAA Awards

NOTE: For in-depth information and further details contact Barbara Taylor, DSN 574-8846 or your local Numbered Air Force (NAF) or Direct Reporting Unit (DRU) awards representative!

Where's the Te



TO 1F-15A-13-1-202-1A

POSTLOADING INSPECTION (CONT)

e. Aft detent inds - ENGAGED

f. Umbs inds - ENGAGED

g. Aft dampener inds - ENGAGED

h. (LAU-106) Buffer conn - SEATED

8. ALE-45 - INSPECTED

a. MLC/Magazines - INSTALLED, SECUR

9. Access drs, pnls, & fairings - SECURED

10. Tools & equip - REMOVED

11. Make Form 781 entry, if appl

ch Data?

A close-up photograph of a hand holding a black pen, writing on a document. The document is a form with various fields and text. The background is blurred, showing what appears to be a computer monitor or a similar device. The lighting is bright, highlighting the hand and the pen.

By Capt. Thomas B. Vance, Jr.
and MSgt. Arthur D. Newson
Shaw AFB, S.C.

Photos by TSgt. Jack Braden

Postldg Insp/Disp/Gun/Msl/Flt Ops
Change 2



In 9th Air Force/U.S. Central Command Air Forces, recent weapons mishaps have occurred because the crews involved with each incident did not properly use technical data. Technical orders and checklists are required for a reason: to provide the information necessary for Air Force personnel to perform an operation accident free. In today's high-paced world, it seems we are always looking for ways to do something faster and easier.

trained to safely and properly conduct the task at hand. We

When crews replace tech data instructions with “tricks of the trade,” mishaps have a greater chance of occurring.

often forget — or get complacent — about the fact that munitions are designed to kill. If not handled properly, these munitions can kill Air Force personnel and destroy equipment. Tech data must be used for all explosive tasks, regardless of the time constraints that may exist.

Any deviation from the tech data can have catastrophic results. Loadcrew and team chiefs must ensure their crew members use tech data at all times, without exception.

When crews replace tech data instructions with “tricks of the trade,” mishaps have a greater chance of occurring. These “tricks,” a.k.a. shortcuts, are unwritten procedures we learn either from experience or past supervisors. The problem with these shortcuts is that their safety has not been validated through expert testing and analysis. However, leadership complicates matters by teaching these same shortcuts to our young troops, who accept them as proper procedures. Eventually these troops move on to other bases and teach these unproven methods to others who eventually move on and continue the cycle. This is how this type of misinformation spreads throughout the Air Force and infects every level with a plague of bad practices that are perpetu-

the systems engineers determine if the practice is acceptable.

In the September 2000 and January 2001 mishaps, as well as several others from past years, personnel deviated from normal procedures because of what we term “temporary duty mentality.” This mentality comes from a perception that Air Force personnel operating from a forward-deployed location no longer need to follow normal procedures. But this could not be further from the truth. All aircraft in CENTAF’s Area of Responsibility (AOR) carry live ordnance. This environment is definitely not the time to use shortcuts when building, transporting or loading munitions. Since live munitions are inherently more dangerous than their inert counterparts, everyone in the AOR should become *more* vigilant concerning tech data usage. Remember safety, is a force multiplier that preserves personnel and equipment vital to the conduct of contingency operations.

As Air Force leaders in the munitions world, we must ensure our troops use tech data to prevent unnecessary mishaps. We cannot let the “temporary duty mentality” or complacency endanger our troops or other warfighting assets. We are entrusted with the lives of those under our supervision. No one wants to explain to a mother, father or spouse how their loved one was injured or killed by an unsafe practice that could have — and should have — been avoided. ▶

Checklist Preventable Mishaps

September 2000: A weapons loadcrew was tasked to safe an AIM-120 missile on a fuselage station of an F-15C at Prince Sultan AB, Saudi Arabia. A loadcrew member failed to properly insert the safing pin prior to retracting the missile’s umbilical cable. He proceeded to insert the ratchet into the missile unlock hole instead of the umbilical retracting hole of the launcher. Instead of retracting the umbilical cable, he unlocked the missile. This caused the missile to release and hit the ground, causing over \$20,000 worth of damage and requiring the missile be sent back to depot for inspection and repairs.

January 2001: A weapons loadcrew was unloading an AGM-88 missile from an F-16C at Prince Sultan AB. Instead of inserting the pin into the forward track hole, a loadcrew member placed the pin into the umbilical yoke hole. The crew then moved the missile forward into download position. However, since the forward track pin was not properly installed, the missile moved too far forward, came off the LAU-118 launcher and fell to the ground. The missile sustained over \$15,000 worth of damage and had to be sent to depot, decreasing CENTAF’s missile inventory.

March 2001: In preparation for a routine training mission, a weapons loadcrew loaded a CAP-9 missile onto Station 2 of an F-16 at a 9 AF stateside base. The missile did not properly connect to the launcher detent during the upload attempt. The upload crew could not get the missile properly seated onto the launcher. To remedy the situation, they moved the missile forward to offload it for a second upload attempt. However, the crewmember that was supposed to be at the front of the missile was not in position, causing the missile to fall to the ground. The missile radome was damaged, causing over \$20,000 damage.



ORM: Believe It or No

Photos by TSgt. Jack Braden



F-15 crew chief SrA. Brian Miller from the 1st Equipment Maintenance Squadron, Langley AFB, Va. tightens retaining bolts on an F-15 rudder actuator.

*I*t's 3:00 a.m. on the trailing edge of a 12-hour shift. The F-15C rudder actuator is broken, the jet is on the schedule to fly that day, the production supervisor is screaming for you to finish and — by the way — it's raining. As you are reading through the Technical Order (T.O.), you see that your next job step calls for placing a stab-pad on the stabilizer to prevent any dropped objects from poking a really expensive hole in it. The only thing is the stab-pad is stored in support. That means it will take 20 minutes of travel and check-out time to do what the T.O. tells you is required — so you consider your options. You can: (a) go get the stab-pad

t, It's a Natural Process

By SMSgt. James C. Fleshman
Hill AFB, Utah

ORM provides a step-by-step method of reaching a common sense decision for those who may not apply the required common sense in a given situation. The obvious book answer in the above scenario is for the technician to climb down from the stand, go to support, drag a stabpad out and continue the job. As supervisors, however, we quickly learn our people take unnecessary risks *for their own reasons*. Very often the decision to save 5 minutes or to shortcut the job ends up

even the wing commander how their people managed to destroy equipment and/or an aircraft. Avoiding long explanations and accident reports is what ORM is all about. The best part of ORM is that it really does mimic the natural thought process and, as such, has several steps.

Identify the Hazards

In the outside world, this step usually includes phrases like: "Whoa, that's a really big Doberman!" or "Hold that nail while I hit it with

ORM provides a step-by-step method of reaching a common sense decision for those who may not apply the required common sense in a given situation.

costing the Air Force millions of dollars. Since we cannot stand next to every airman on every job, the next best thing we can do is train our people to analyze situations and take the most prudent action. A supervisor who teaches his people how not to make silly mistakes is the one that really shines. Section chiefs in charge of poor risk managers spend a great deal of their day explaining to Quality Assurance, their supervisors and sometimes

thishammer." On the flight line ramp, hazard identification is even easier. The T.O. will start this process with words like CAUTION or WARNING. The Air Force has spent the last 50+ years identifying hazards in the workplace and has pretty much figured out just about everything that can go wrong in aircraft maintenance. This in-depth experience has been outlined in our maintenance T.O.s. Instilling the need to read these T.O.s

and extend an already long day or (b) press on, take the chance that nothing will go wrong and finish up in time to catch the end of the late movie. This is a great time to apply Operational Risk Management (ORM).



SrA. Miller safety wires a rudder actuator similar to the one mentioned in this story.



job done. Strong supervision and constant reminders to our people that what we are doing is inherently dangerous can go a long way in preventing accidents.

Analyze Risk

It is at this point that you research your options. During aircraft maintenance, these “options” are conveniently spelled out for the technician in the paragraph under the CAUTION or WARNING. They may direct the technician to pull a circuit breaker, put in safety pins or perform a validation check. Since the “O” in T.O. stands for orders, compliance is not optional. Outside of the maintenance world, this step becomes more difficult. In general, you

every time is the best way supervisors can help their folks identify hazards on the job.

Assess the Risk

This is where we try to figure out just how hazardous the risks really are. This calls for an active imagination. The wrench turner must be able to visualize how his or her actions can contribute to the worst-case scenario and the relative probability of this happening. A good example of this cause and effect evaluation is

when a troop decides to not pin a cockpit seat when working on the aircraft in a hangar. In essence, he or she is risking being launched through the hangar roof. Regrettably, this is where ORM breaks down on the flight line.

Young troops with limited experience quite often fail to see just how dangerous their actions are. Instead they focus on getting the job finished. We have all seen people take outrageous risks (commonly known as direct safety violations) to get the

can: (a) engineer for safety, (b) train your people, (c) establish safety controls, (d) avoid the situation or (e) accept the risk.

Make Control Decisions

As with most decisions, this is the most dangerous part of ORM. Make the right choice and all is well. Make the wrong choice and you get to meet all kinds of interesting people in your chain of command — or someone gets hurt — or someone dies. As a rule, you want to make those choices that maximize

benefits and minimize risks. Sometimes, however, our people are the victims of disorganized thinking and make the exact wrong choice in maintenance.

Every time we see our maintenance troops go out on a limb and consciously perform the job without regard to written safety guidance, we are watching them make choice (e). One of the biggest problems with accepting the risk is that bad things do not happen every time you make a bad decision. The younger troops take a shortcut, get away with it and think it will work out that way every time. Really bad accidents are usually a team effort and happen because several people make bad risk management decisions.

The good news is that most of the control decisions in day-to-day operations have already been made and are on the books. The challenge to supervisors is to ensure their people read those books, follow the guidance and make the proper control decisions. As leaders, we can choose to establish additional safety controls and improve training, but unless we make it clear that there are other personal risks to violating T.O.s, we can expect our people to continue to make faulty choices.

Implement Risk Controls and Supervise and Review

The doing of a job and the follow-up can cause serious prob-

lems if they get disconnected. Supervisors need to ensure their people are rewarded for making the proper choices. This can be difficult, as we tend to be a results-oriented Air Force. For instance, the fastest “go-to” technician on the ramp is constantly rewarded for get-

ORM Checklist

- Step 1 - Identify the Hazards
- Step 2 - Assess the Risk
- Step 3 - Analyze Risk Control Measures
- Step 4 - Make Control Decisions
- Step 5 - Implement Risk Controls
- Step 6 - Supervise and Review

ting the job done now. All is well — or so you think. It might be that same fast burner who is skipping critical steps in the T.O. to make such good time. Critical steps like: MUNITIONS MATCH MUNITIONS

REQUIREMENTS (resulted in a burnt down target range); INSTALL SAFETY STRUT (resulted in a chopped off hand); or ENSURE DEFUEL CIRCUIT BREAKER IS OUT (resulted in 1,000 gallons of spilled JP-8). Now speed might not seem as important when compared to the costs that were paid. Be sure your people are doing the right thing and reward the right behavior.

ORM is nothing new. Every one of us makes thousands of ORM decisions as we drive to work, do the job and come home again every day. Safety data shows that the vast majority of mishaps are the result of human error and preventable. By teaching our folks how to step back and think before they act, we can eliminate the majority of poor decisions during maintenance. For the most part, the ORM process has already been performed and recorded in the T.O.s. By enforcing the technical procedures already in place, we can greatly reduce the risks of an already risky profession. ▶



Fireworks Celebration



Recreation Dangers

By MSgt. Mark W. Nichols
Shaw AFB, S.C

A mputation, third degree burns, loss of sight, loss of hearing ... sound like battlefield injuries, an industrial accident or maybe a car crash? How about the aftermath of an off-duty get-together of a few friends or family members — no way, guess again! These are real life, recreational fireworks injuries seen by our military and civilian physicians during their professional careers. Seemingly innocuous sparklers, firecrackers and bottle rockets exact a toll of pain and suffering on thousands of Americans each year. Unwitting children often make up a large segment of those victimized, and the physical and emotional scars often last a lifetime.

An Air Force doctor interviewed in the preparation of this article stated he had personally witnessed the following injuries:

- Superficial burns to the fingers and hand from simply handling the lighting devices or from faulty fuses
- A blinding injury from an off-course bottle rocket
- A third degree burn on the lower extremity from a roman candle that ignited a patient's clothing
- A complete amputation of an index finger from a "home-made" super firecracker

Fireworks account for an average of 10,000 reported injuries annually. Firecrackers top the list as the cause of these injuries. Firecrackers account for approximately 51% of all injuries followed by skyrockets at 12%, common sparklers at 7%, according to the U.S. Consumer Product Safety Commission, National Electronic Injury Surveillance System.

As previously stated, children are especially susceptible to injury when using fireworks. Under no circumstances should children, especially small children, be allowed to use fireworks unsupervised.

Additionally, fireworks are not authorized in all states and municipalities. Local ordinances in many cases severely restrict and, in some cases, prohibit the use of fireworks. It is important to check with your local fire and police departments prior to using any fireworks. Just because you can purchase them, does not mean it is legal to use them!

Does this mean all fireworks use should be avoided? Absolutely not! Responsible use of legal fireworks under the close supervision of mature individuals can be a lot of fun for all. Do not let your Fourth of July celebration end on a sour note. Follow the manufacturer's guidelines and treat all fireworks with respect! ▶

Fireworks Safety Tips

The American Pyrotechnics Association offers the following safety recommendations for using fireworks:

- Always read and follow label directions
- Always have an adult present
- Only buy from reliable fireworks sellers
- Only ignite fireworks outdoors
- Be sure to have water handy
- Never experiment or attempt to make your own fireworks
- Light only one at a time
- Never re-ignite malfunctioning fireworks
- Never give fireworks to small children
- Store fireworks in a cool, dry place
- Dispose of fireworks properly
- Never throw fireworks at another person
- Never carry fireworks in your pocket
- Never shoot fireworks in metal or glass containers

The Most Dangerous

By MSgt. J.C. Bollman
Nellis AFB, Nev.



us Explosives

Often, the question is asked, “out of all the different explosives — homemade or manufactured — which are the most dangerous?” It may surprise you to learn that according to the U.S. Consumer Products Safety Commission (CPSC), approximately 7,000 people were treated for fireworks-related injuries in 1998. This is down from an estimated 8,300 in 1997. In general, this makes fireworks, such as bottle rockets and sparklers, the most dangerous manufactured explosives and the M80 and M100 cherry bombs the most dangerous homemade explosives.

The bottle rocket is dangerous for two very simple reasons. First, the rate of travel of a standard bottle rocket can reach speeds up to 200 miles per hour. Bottle rockets are very susceptible to ricochet and can end up traveling in any direction but the one intended. Second, the bottle rocket presents a significant fire hazard. When a bottle rocket detonates, the casing burns from a few seconds to a few minutes. A few seconds are all that is needed to start a fire, which is often the case. The sparkler is the silent danger. Sparklers do not blow up and they do not have trajectory. What they do have is heat. A typical sparkler can burn at temperatures up to 1,800 de-

grees. At this temperature even gold melts so imagine the close range effects on your skin and eyes.

The M80 and M100 cherry bombs are illegal in many states. This is because of the amount of energetic material contained in these small packages. Typically, 16 M80s or eight M100s detonated together can equal a stick of commercial grade dynamite. The destructive power of these fireworks is very impressive. The same general principles that apply to commercial and military explosives apply to fireworks. The explosive power of these fireworks can be doubled when they are compressed or contained. Illegal fireworks continue to be a serious problem. According to the CPSC, over the past 10 years, illegal explosives or homemade fireworks have typically caused 33% of the injuries associated with fireworks. According to Air Force requirements, on- or off-duty Air Force personnel must not take part in the transportation, storage, set up or functioning of commercial fireworks for on-base fireworks displays. As the Fourth of July approaches, do not become another statistic. Fireworks can be the most dangerous explosives and are best handled by trained professionals. ▶

A typical sparkler can burn at temperatures up to 1,800 degrees.



Photos by SSGT. Greg Davis

Fireworks Accidents in the News

These common fireworks have been the primers in several accidents that have affected people from around the world as demonstrated in the following news stories from CNN:

1 Jan 99 - Investigators are trying to determine what caused a truck loaded with fireworks to explode during preparations for a New Year's Eve show killing two in New Orleans.

31 Dec 98 - Fireworks and other missiles exploded in the staging area for a New Year's Eve midnight celebration, killing two workmen and injuring a deputy sheriff.

12 Dec 98 - Six women and one man killed in fireworks explosion in Michigan.



Weapons Safety

ACC Losses for FY 01

(1 Oct 00 - 31 May 01)

Number of Weapons Mishaps / Dollar Losses*			
	Class A	Class B	Class C
8 AF	None	None	↑↑↑
9 AF	None	None	↑
12 AF	None	None	↑
AWFC	None	↑	None
TOTAL	None	1/\$378K	None
Weapons Fatalities - None Nuclear Mishaps - None		* Cost of most recent mishap(s) not yet available	↑ = Missile Mishap  = Explosive Mishap

Lock on Safety



The Combat
EDGE

Night Ops

Cross-Check-Cross-Check-Cross-Check