THE MOBILITY FORUM

January/February 2003

Air Mobility Command's Magazine

Photo Contest Winners

ATA Conference

Mishap Statistics

Behavior Based Safety

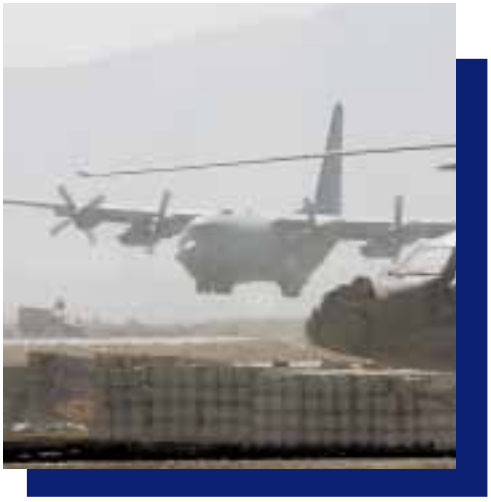
10 Second Risk Management

THE
MOBILITY FORUM

January/February 2003 Volume 13 No. 1

In This Issue

About The Cover...



A U.S. Air Force C-130 Hercules from the 320th Air Expeditionary Wing, lands at a remote Afghani landing zone in support of Operation Enduring Freedom on Oct 23, 2002.

Cover photo by SSgt Aaron D. Allmon II

The Mobility Forum is available on the web at

https://www.amc.af.mil/se/Mobility%20Forum/Mobility%20Home.htm

REGULAR FEATURES

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DIRECTOR'S Corner

Ruminations After A Christmas Party

Hi! You're reading this after the Christmas season and I hope you and your family enjoyed the holidays. As I sit here, pleasantly stuffed with the great potluck we just had in the office, I'm reminded of some resolutions that we should consider for the new year.

Our friends in the Navy (except on the occasion of the annual Air Force – Navy football game) have a long tradition we should emulate. They look out for and protect their shipmates. In our expeditionary Air Force, I'm starting to see that same feeling and commitment in our tent cities. One resolution I'd like to see this year is more Air Force members looking out for each other as shipmates, both on and off duty. We could make a real difference. You never know when just the right word or action will convince your buddy to slow down and take breaks on a long road trip, for example.

Another resolution I'd like to see is more attention to detail. I think this resolution would help all career fields, from maintenance to personnel. With our aging aircraft, the old poem is never more true: "For want of a nail, the shoe was lost. For want of a shoe, the horse was lost…" A recent accident report on an Alaskan Airlines MD-80 brings attention to detail home: for want of some grease, the jackscrew was lost. For want of a jackscrew, the elevator was lost…All career fields have examples where attention to detail is critical to mission success.

Finally, I'd like to see a resolution to have fun safely. We are engaged in a war on terrorism. Mobility flying hours in FY02 were 50 percent greater than in FY01, and FY03 is on track for even more. This translates into a higher work tempo for all career fields. High work tempo needs a counter balance. Personally, I like a high leisure tempo to offset a high work tempo. My hope is we do this safely, always willing to make the "knock it off" call when the play gets too intense and before people get hurt. Off duty activities continue to accumulate the highest mishap rates, to include fatalities.

I've nominated three safety resolutions for the new year: 1) treat each other like shipmates, 2) use greater attention to detail in all we do, and 3) play safely. Usually the life of New Year's resolutions is short. I hope these survive to help you and yours make it through another year safely. I'd like to hear your safety resolution(s). Please send them to ronald.bean@scott.af.mil. Let's be careful out there.

-Col Bean

First Place

Category: Recreational

Title: "No one comes closer"

Photo by Richard T. Kaminsky

First Place

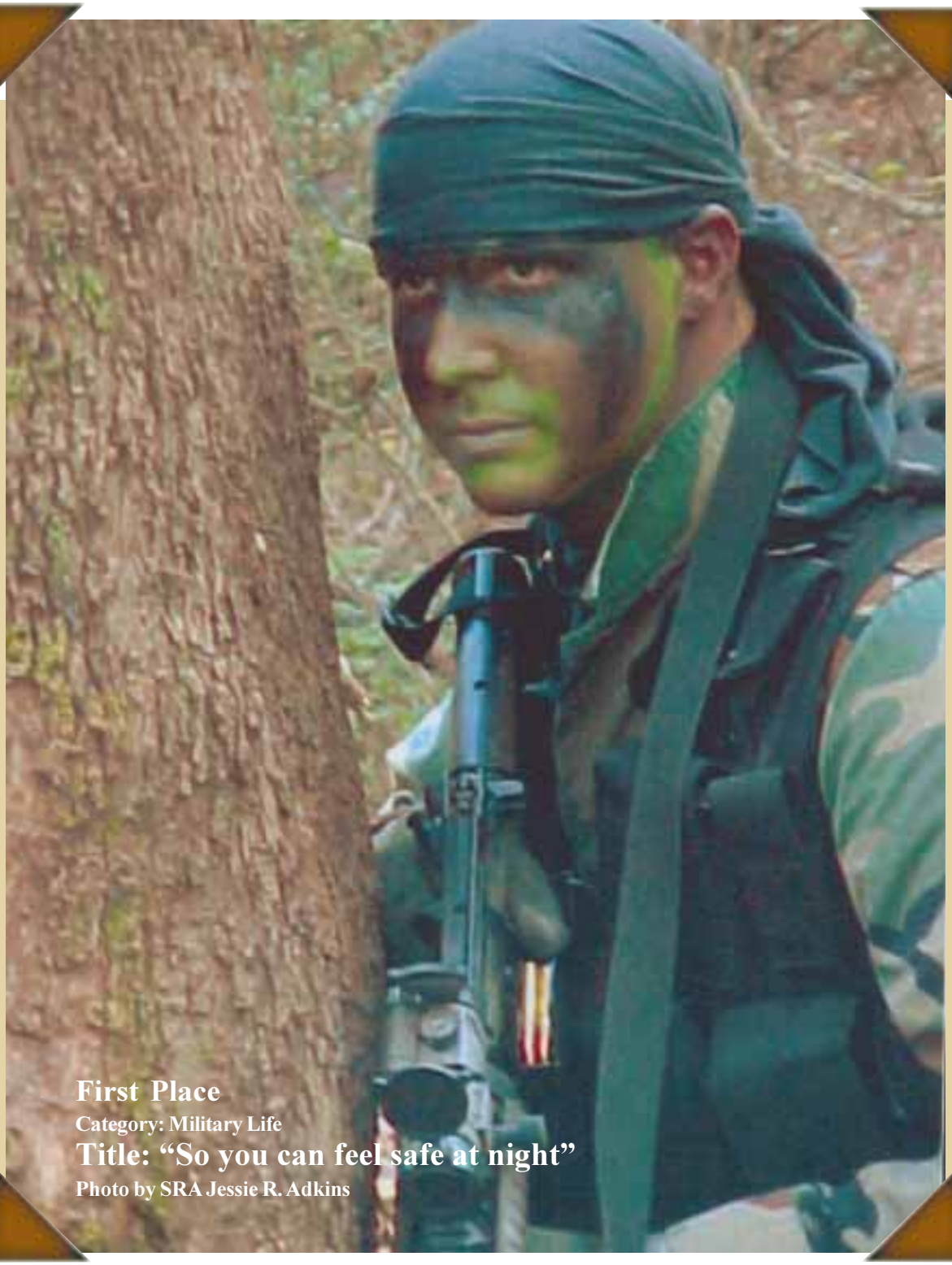
Category: Aircraft Maintenance

Title: "40 below"

Photo by SSgt Martina Culich

Photo Contest

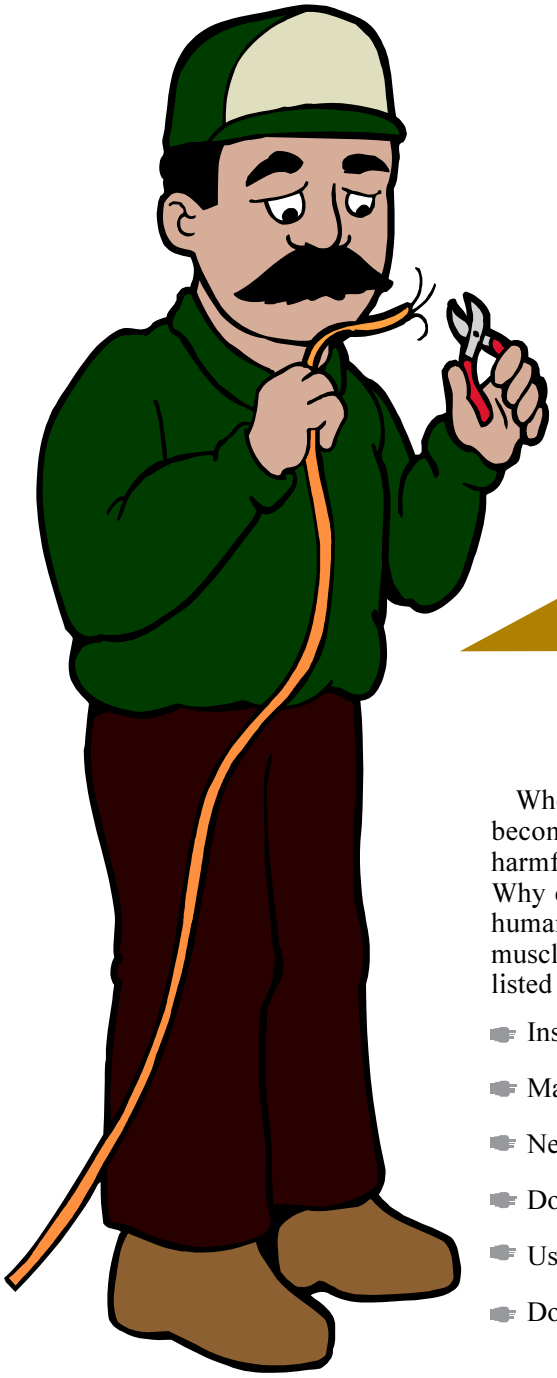
WINNERS



First Place
Category: Military Life
Title: "So you can feel safe at night"
Photo by SRA Jessie R. Adkins

Electrical Safety

By John Schatz, Safety Management Consultant



When you touch a live wire and the ground, a tool, or a machine, you become a conductor of electricity. It doesn't take much electricity to be harmful; in fact, an electrical flow as little as 20 milliamps can be fatal. Why can such a small electrical flow have the potential to be fatal to a human being? In these situations, you cannot release your grip due to muscle contractions.To protect yourself from shocks, follow the guidelines listed below:

- Inspect electrical equipment for loose connections or frayed insulation.
- Make sure electrical equipment is grounded or double insulated.
- Never bend a three-pronged plug or force it into a two-prong outlet.
- Don't touch anything electrical with wet hands or while in a wet area.
- Use insulated, nonconductive tools around power sources.
- Don't reach into a space that may contain energized equipment.

Electricity makes life easier and helps us to perform many tasks. While we have become accustomed to electricity, we must still respect its ability to cause injury and death. Electrical systems, circuits, wires and equipment have been designed for safe use in the intended environments, e.g. insulation, enclosed cases, and safety systems.

Safe practices are your responsibility

Electricity is dangerous; therefore, leave repairs to maintenance personnel or to licensed electricians. However, there are things you can do in the workplace to protect yourself. First, make sure you follow your local special rules and regulations, especially lock out/tag out. Secondly, use personal protective equipment specifically designed for protection from electrical hazards. Wear rubber-insulating gloves if you are handling electrical equipment. Wear approved, insulated hardhats and sometimes you might need rubber boots and rubber clothing, too. Third, don't wear metal jewelry when working with electricity.

Now that you have been briefed on all in-house rules, you should shut off the equipment and then perform a lock out/tag out on that piece of equipment. You should use a voltage meter to confirm the circuit is de-energized and if you are working around a capacitor, you need to bleed off the power as well. Capacitors have the ability to hold an enormous amount of dangerous energy.

If you are working at heights and need a ladder, make sure the ladder is a *non-conducting* ladder, such as fiberglass (preferably) or wood. Never have a ladder within 10 feet of any type of power line. Keep an area three feet from an electrical source clear and clean. There are two excellent reasons for you to be sure the area around an electrical source is clear. The first reason to keep the area free of clutter is to prevent that clutter from becoming a fuel source in case of an electrical fire. The second reason to keep the area free of clutter is to allow quick access to equipment if you need to turn it off during an emergency. Be careful when using electrical equipment around flammable liquids, vapors, or dust as a spark could ignite them!

Staff Sgt. Richard Gross, from the 438th Expeditionary Civil Engineering flight, starts up a mobile electric power unit (MEP-12) after the relocation of the base power plant at a forward deployed location supporting Operation Enduring Freedom. The 438 ECEF Power Production section operates and maintains a base power plant consisting of 8 mobile electric power units (MEP-12), 750 KW prime power generators providing all of the electrical needs for a 1000 man tent city. Additionally, they are responsible for the operation and maintenance of 19 portable MEP units and 8 Telescopic Floodlight light carts. **Photo by: SSgt William Greer, 48th Communications Squadron**

GROUND-FAULT
Circuit Interrupters (GFCI)

Insulation and grounding are two recognized means of preventing injury during electrical equipment operation. Placing nonconductive material such as plastic around the conductor may provide conductor insulation. Grounding may be achieved through the use of direct connection to a known ground such as a metal cold water pipe.

The metal housing or enclosure around a motor or the metal box in which electrical switches, circuit breakers and controls are placed, protects the equipment from dirt and moisture and prevents accidental contact with exposed wiring.

There is, however, a hazard associated with housings and enclosures. A malfunction within the equipment, such as deteriorated insulation, may create an electrical shock hazard. Many metal enclosures are connected to a ground to eliminate the hazard, but if a "hot" wire contacts a grounded enclosure, a ground-fault results which normally will trip a circuit breaker or blow a fuse. Metal enclosures and containers are usually grounded by connecting them with a wire going to ground. This wire is called an "equipment grounding conductor." Most portable electric tools and appliances are grounded by this means. There is one disadvantage to grounding. That disadvantage is that a break in the grounding system may occur without the user's knowledge.

Insulation may be damaged by hard usage on the job or simply by aging. If this damage causes the conductors to become exposed, the hazards of shocks, burns and fire will exist. Double insulation may be used as additional protection on the live parts of a tool, but double insulation does not provide protection against defective cords and plugs or against heavy moisture conditions. The use of GROUND-FAULT circuit interrupters or GFCI is one method used to overcome grounding and insulation deficiencies.

The ground-fault circuit interrupter is a fast-acting circuit breaker that senses small imbalances in the circuit caused by current leakage to ground, and, in a fraction of a second, shuts off the electricity. The GFCI continually matches the amount of current going to an electrical device against the amount of current returning from the device along the electrical path. Whenever the amount "going" differs from the amount "returning" by approximately 5 milliamps, the GFCI interrupts the electric power within as little as one fortieth of a second.

The GFCI will not protect a person from line to line contact hazards, such as a person holding two "hot" wires or a hot and a neutral wire in each hand. It does provide protection against the most common form of electrical shock hazard, the ground fault. It also provides protection against fires, overheating, and destruction of insulation on wiring.

With the wide use of portable tools and the use of flexible cords, connectors, receptacles, and cord and plug connected equipment, the potential for hazards created by improper use and maintenance can occur. Flexible cords are more vulnerable to damage than is fixed wiring. Flexible cords must be

connected to devices and to fittings so as to prevent tension at joints and terminal screws. Because a cord is exposed, these terminals become more vulnerable.

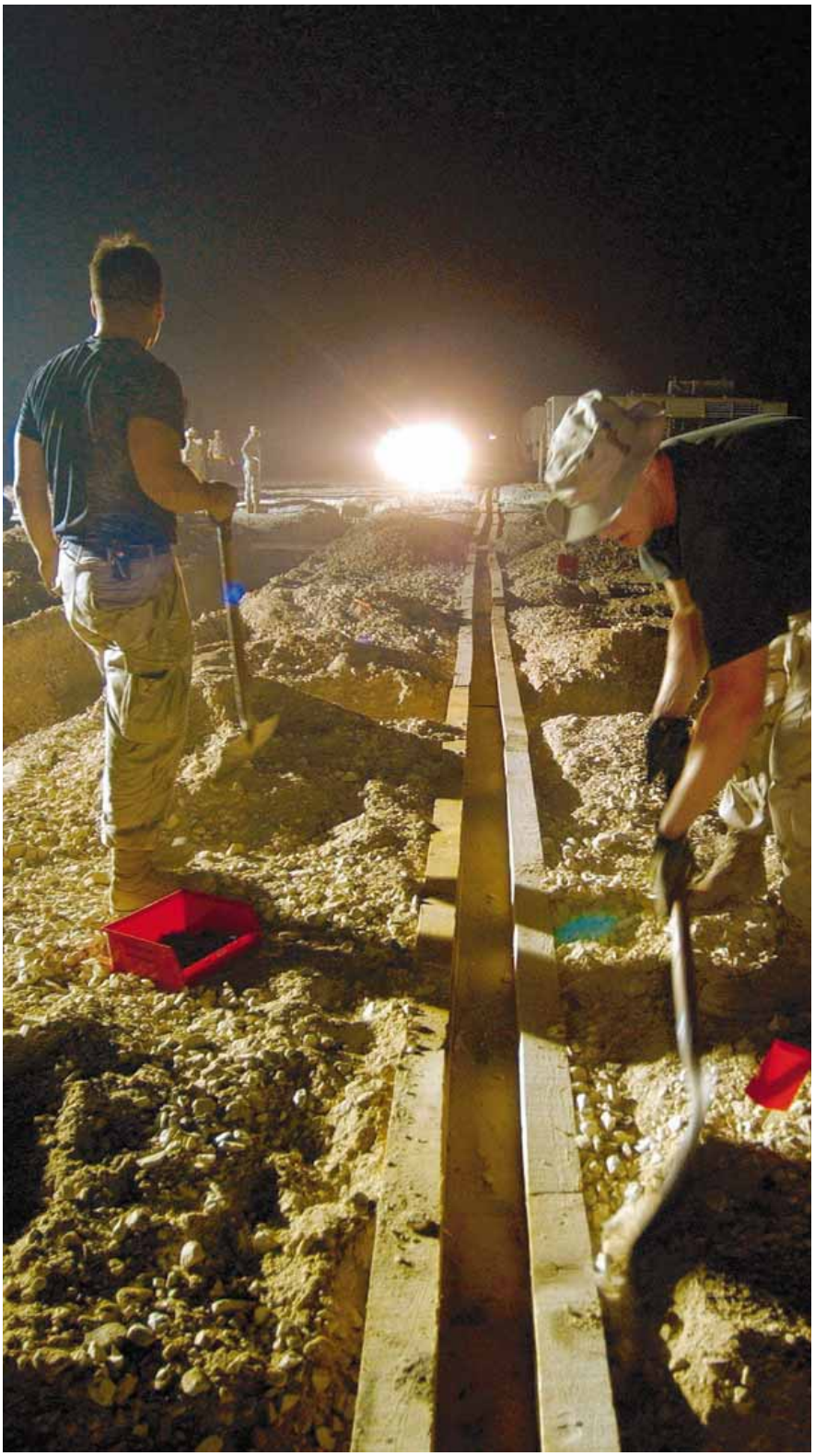
Another potential hazard occurs with improperly connected terminals. This is often a common situation. When a cord connector is wet, hazardous leakage can occur to the equipment grounding conductor and to humans who pick up that connector if they also provide a path to ground. Such leakage is not limited to the face of the connector, but also develops at any wet portion of it.

When the leakage current of tools is below 1 ampere and the grounding conductor has a low resistance, no shock should be perceived. However, should the resistance of the equipment grounding conductor increase, the current through the body also will increase. Therefore, if the resistance of the equipment grounding conductor is significantly greater than 1 ohm, tools with even a small leakage become hazardous.

Don't abuse electrical tools. Never carry a tool by the cord or hose. Never yank the cord or the hose to disconnect it from a receptacle. Keep cords and hoses away from heat, oil and sharp edges. Disconnect tools when not in use, before servicing, and when changing accessories such as blades, bits and cutters.

All observers should be kept at a safe distance from the work area. Avoid accidental starting of the equipment. Don't hold a finger on the switch button while carrying a plugged-in tool. In addition, tools should be maintained with care. They should be kept sharp and clean for the best performance. Follow instructions in the user's manual for lubricating and changing accessories. All portable tools that are damaged must be removed, or tagged "Do Not Use".

Electrical safety when working with electrical equipment is much more than plugging your equipment into a receptacle and beginning work. It's inspecting and maintaining your equipment. It's working safely by following the rules and procedures. It's thinking about safety every time you perform your job.



Staff Sgts. James Edwards and William Brundege, both from the 438th Expeditionary Civil Engineering flight, reinforce the sides of a wooden trough, used to protect power cables, with rock and sand during the relocation of the base power plant at a forward deployed location supporting Operation Enduring Freedom. The 438 ECEF Power Production section operates and maintains a base power plant consisting of eight mobile electric power units (MEP-12), 750 KW prime power generators providing all of the electrical needs for a 1000 man tent city. Additionally, they are responsible for the operation and maintenance of 19 portable MEP units and eight Telescopic Floodlight light carts Nov. 9, 2002. **Photo by: SSgt William Greer, 48th Communications Squadron**

FY02 Safety Mishap Rates AMC vs. AF

Flight

- **AMC Class A Rate,** 0.92 (4) **AF Rate,** 1.52 (35)
- **AMC Class B Rate,** 5.29 (25) **AF Rate,** 3.38 (78)
- **AMC Class C Rate,** 11.50 (50) **AF Rate,** unavailable

Ground

- **AMC Class A Rate,** 0.17 (10) **AF Rate,** 0.17 (90)
- **AMC Class B Rate,** 0.06 (4) **AF Rate,** 0.05 (28)
- **AMC Class C Rate,** 6.28 (360) **AF Rate,** 5.43 (2916)

The Mobility FORUM

2003 Writing Contest

SUSPENSE: Postmarked NLT 30 April 2003

FORMAT: Identify entries by title only. Include author's name, rank (when applicable), unit, home address, DSN, Commercial telephone and fax numbers, and e-mail address (if applicable). You may submit any photos/graphics relating to your entry, if available.

LENGTH: Original, previously unpublished fiction or nonfiction. Entries should not exceed four single-spaced pages, including photographs/graphics.

CONTENTS: Entries should contain one or more of the following messages: safety, risk management, CRM, tanker and airlift operations, and SAC/MAC/AMC heritage.

ELIGIBILITY: Military and civilian employees of the Department of the Air Force and Air Reserve Components. All other entries are judged under a Special Category.

PRIZES: 1st Place $300, 2nd Place $200, 3rd Place $100.

SUBMIT TO

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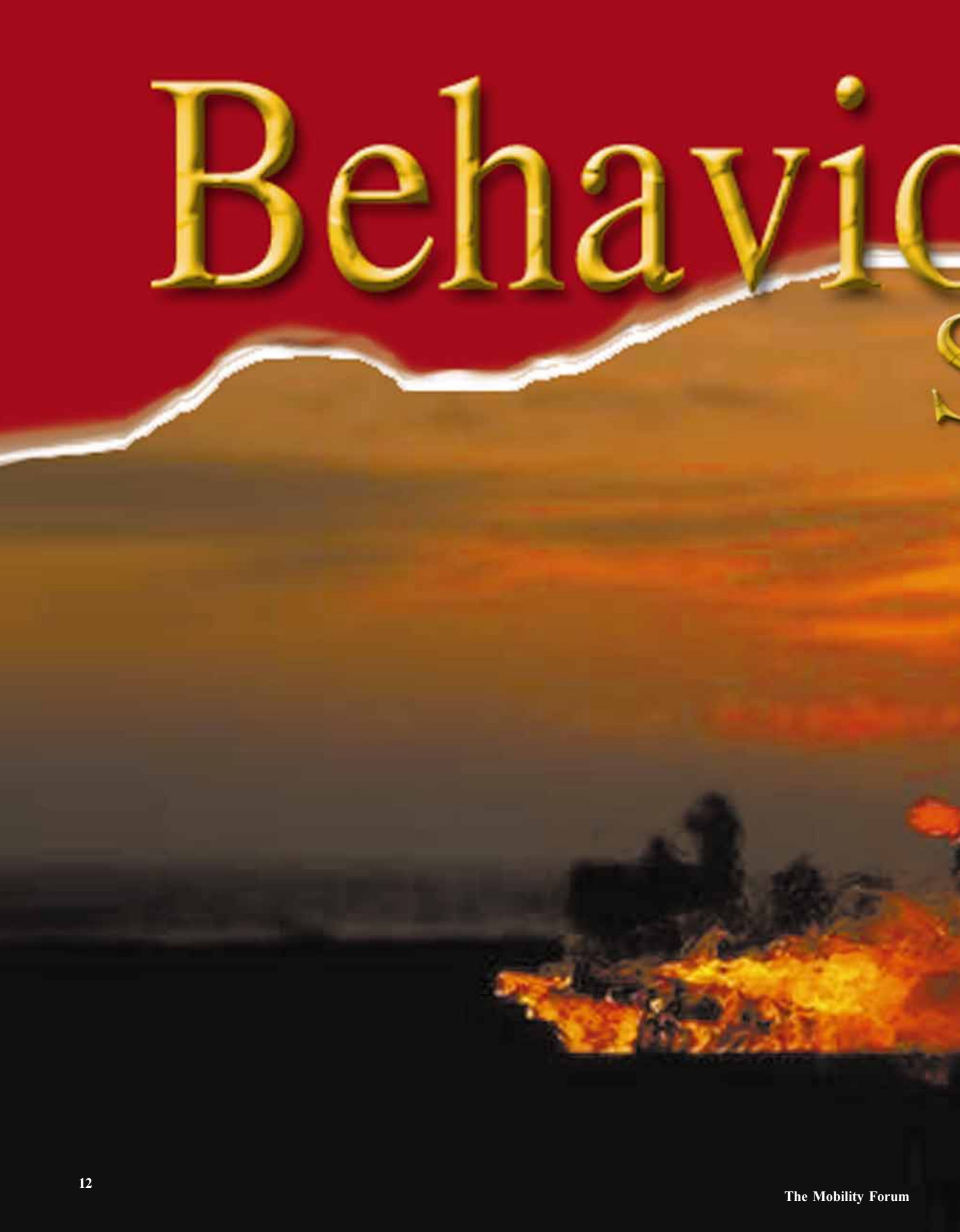

Behavio

By John R. Schatz
Saftey Managment Consultant

An introductory look at behavior-based safety

Behavior-Based Safety

The Behavior-Based Safety concept has been around since the 1970s but only in the late 1990s did it begin to gain popularity. To understand behavior-based safety, it is important to look at where the safety industry has come from. Historically, safety revolved around three main principles:

- Engineering Controls
- Administrative Controls
- Personal Protective Equipment

Engineering Controls are mechanical means to reduce hazards or potential hazards. It includes measures such as placing guarding on machinery, providing adequate ventilation to lower chemical concentrations, placing noise damping devices on equipment, etc.

Administrative Controls usually are put in place when a safety hazard cannot be engineered out of the process. It includes placing warning signs, job rotations (e.g., placing an employee in a noisy environment for a short duration and then rotating him/her to a quieter environment), etc.

Personal Protective Equipment is often used in combination with the other controls. It includes wearing devices that reduce the hazard.

Examples include wearing a respirator to preclude exposure to chemicals in the ambient air, earplugs to block harmful noise levels and safety glasses to protect the eyes from flying particles.

These measures are either proactively implemented by detailed examination using sophisticated monitoring devices or applied after careful observations of the work place process. Probably too often though, these measures were not employed until an accident occurred. The accident was then investigated and subsequently measures to prevent reoccurrence were employed. But even putting these measures in place did not always deter the incident reoccurrence. Safety professionals began realizing that a worker's behavior played an important role in the safety equation, thus giving birth to the Behavior-Based Safety sciences.

Behavior is an "upstream" approach to safety, i.e., it focuses on the "at risk behavior" that might produce an accident or near miss rather than trying to correct a problem after an accident or occurrence. The behavior-based aim then, is to change the mindset of an employee by hopefully making safety a priority in the employee's mind.

Behavior is an "upstream" approach to safety...it focuses on the "at risk behavior"

Thus the sequence used to change behavior is basically a three-step process that includes:

1. Turning an unconscious, risky habit into a conscious, self-directed, risky behavior.
2. Changing a conscious, self-directed, risky behavior into a conscious, safe, self-directed behavior.
3. Changing a conscious, safe, self-directed behavior into an unconscious safe habit.

So how do we get from the risky habit to the safe habit? First, it is done by involving personnel in the process. It may seem obvious that a company should do this but again, historically, we see that most safety awareness programs consist of an instructor speaking before a group and enunciating safety directives with little or no feedback from employees. Alternatively, Behavior Based training aims to include personnel by discussing the hazards and the critical safe and at-risk behaviors of a particular job with employees and having them become observers by watching and interviewing others at work. Once this is done the observers share the results with the people they observe both in a group meeting and one-to-one coaching sessions. Participants in this process then discuss techniques to increase long-term improvement into the work

process. By doing this, a behavior shift begins to occur by virtue of the fact that the employee begins to develop ownership into the process and by the fact that having peers (fellow workers) watch you perform your work suddenly makes you consciously aware of what you are doing or the way you are doing something. This leads to discovery and change. If this is reinforced over a period of time, a new behavior is established. Thus the goal of behavior-based safety is accomplished and that change should be reflected in lower incident rates and lower worker compensation claims and premiums.

Behavior-based training impact on core functions of Human Resources

First, it should be noted that safety is an important component of human resources and conversely human resources is an important component of safety. Safety and human resources have always shared this symbiotic relationship. In many large and midsize corporations, the safety director reports to the human resources director. In smaller companies the safety and human resources director are one in the same. Behavior-Based Safety provides a positive and proactive impact on personnel in the workforce. The human resources department should be aware of the increased cost of hiring a competent and qualified consultant and be aware of the loss of production time, as employees are involved in the break out sessions and observation portions of this initiative. However, the loss of production time should be more than compensated in the long term by the lower accident rates, lower cost paid out for injured worker(s) compensation claims, and lower worker compensation premiums. Additionally, there would be lower lost production time when an injured worker is away, which includes the cost of training a interim employee to fill that vacated position. Another benefit to behavior-based safety is that during the process employees often identify areas of improvement in a particular job process, making it more efficient and providing greater quality. Also, with employee involvement, a deeper relationship evolves with the company and co-workers improving the overall morale of the company that again improves safety and production.

In summary, behavior-based safety relates to the five functions of human resources by:

Planning

- In the planning stage, management support is imperative to the implementation of the behavior-based safety program.

Organizing

- Once senior management support is in place then the strategic organization of training in the various departments is required.

Staffing

- The impact on staffing is the requirement for a competent and qualified behavior-based consultant.

Leading

- Senior management, human resources, safety management and department heads must be aware that behavior-based safety is more than a passing fad.

Controlling

- The successful implementation of any program is the ability to place certain thresholds and make measurement to ascertain the effectiveness of the program. Thus to control the behavior-based program one must put in place certain quality assurance measures, such as an Information Collection Evaluation System (ICES).

Behavior-based safety is new philosophy for doing business and thus causes a paradigm shift in a company's internal relationship.

References

Geller, E.S. "10 Relevant Principles from Behavior Science" *Professional Safety.* September 2001

Johnson, D. "A coming out party for Behavior Safety" *Industrial Safety and Health News.* June 2002

Geller, E.S. "The Ten Myths of Behavior-Based Science" *Industrial Safety and Health News.* April 2000

Krause, T. R. "Presenting a Balance Sheet" *Professional Safety*. August 1998

Kamp, J. "Is Behavior-Based Safety Right For You" *Industrial Safety and Health News.* April 2000

Krause, T.R. "Using Behavior-Based Methods drive Cross-Functional Improvement" *Proceedings form the American Society of Safety Engineers Professional Development Conference*. June 2001

Geller, E.S. "Two Common Coaching Techniques" *Industrial Safety and Health News.* May 2000

Robotham, G. "Safety Training that Works" *Professional Safety* May 2001

Sarkus, D. " Should you be your own Behavior Consultant?" *Industrial Safety and Health News.* December 2000

Speir, R.O. " Punishment in Accident Investigation" *Professional Safety.* August 1998

C-5 Fleet Safer
With Anti-collision Upgrade

by 2d Lt Tracy Bunko
Aeronautical Systems Center Public Affairs

Maintenance personnel installed a new Traffic Alert and Collision Avoidance System (TCAS) on C-5 Galaxy transport aircraft on Oct. 31, according to program officials at Wright-Patterson AFB, OH.

The system, part of an overall upgrade program designed to keep the transport giant flying until 2040, will reduce the potential for mid-air collisions. Installation was required under Global Air Traffic Management regulations, said Lt. Col. Darrel R. Watsek, the C-5 Avionics Modernization Program manager.

"TCAS is basically a cockpit display that provides the pilot with the relative positions of aircraft in his or her vicinity," said Watsek. "The system alerts the pilot when it determines that there is a danger of collision with another aircraft."

In a TCAS-equipped aircraft, said Watsek, the pilot can adjust his cockpit instruments to track up to 50 targets within an 80-mile forward radius. When the system determines that an aircraft will approach the TCAS-equipped plane too closely, the pilot receives both an aural and symbolic warning. If they continue to converge the pilot of the TCAS aircraft will get a resolution advisory directing him to climb or descend.

"TCAS is now installed on all 126 of the U.S. Air Force's operational C-5 fleet. That's important to the safety of our crews and a major milestone in the AMP program", said Col. Jim Lynch, development system manager for the C-5 modernization program, who credits the system with already avoiding potential accidents.

Airman 1st Class Natasha Gaines, an electrical environmental apprentice, rebuilds C-5 anti-collision lights. Gaines is from the 60th Equipment Maintenance Squadron, Electrical Environmental Shop, at Travis Air Force Base, Calif., June 4, 2002. **photo by Kristina P. Cilia**

"In two incidents, C-5 crews reported that TCAS warned them of aircraft dangerously close and directed them to maneuver to avoid collision," he said.

The upgrade is also a major step in bringing the C-5 in line with navigation and safety requirements under the Global Air Traffic Management program, which will allow the heavy transport access to more efficient flight routes, said Watsek. The complete avionics modernization program will provide a suite of advanced avionics needed to meet the stringent navigation and communications required by GATM.

In addition, the new system will use global positioning satellite to enable C-5 crews to fly to airfields in poor weather without the use of a ground based navigation aid.

"With the advanced avionics provided under AMP," said Lynch, "the Air Force can meet airspace requirements anywhere in the world and it allows us to move the war fighter and critical combat equipment safer, faster and more efficiently."

A modified NKC-135E Stratotanker aircraft, operated by Test Operations at Edwards Air Force Base, Calif., is prepared for a mission to take scientists up to observe an upcoming Leonid meteor shower. The aircraft is equipped with more than 11 quartz-crystal windows designed to support advanced technology optical data collection. **Photo by Rob Bardua**

NKC-135E Gives NASA Scientists a Lift for Leonid Mission

by Rob Bardua
Air Force Flight Test Center Public Affairs

Air Force flight test experts, NASA researchers, and a team of 42 astrobiologists from seven countries departed Edwards AFB on Nov. 15 for a mission to Spain to observe and collect data on both of this year's Leonid meteor showers. The scientists are looking for clues to the diversity of comets and their impact on the chemistry of life's origin on Earth. Dr. Michael Meyer, a senior scientist for astrobiology at NASA headquarters in Washington is among the researchers who are looking for answers as to whether meteors might have showered the Earth with the molecules necessary for life's origin. According to Meyer, the team is eager to find out what material from space rains down on Earth and what happens to the organic matter when it interacts with the atmosphere.

One of the aircraft for the mission is a specifically modified NKC-135E Stratotanker, operated by Test Operations at Edwards AFB. The Stratotanker flew with NASA's DC-8 airborne laboratory aircraft and provided stereoscopic observations and spectroscopic measurements of mid-infrared and optical meteor missions.

In order to accomplish this, the NKC-135E aircraft was equipped with more than 11 quartz-crystal windows designed to support advanced technology optical data collection.

"There are very few aircraft with this many windows down the center, and you can put all sorts of instruments and cameras in the aircraft to conduct this mission," said Maj. Jon Haser, Edwards' global operations flight commander, and navigator for the mission. Haser, who has flown on two other Leonid missions for the Air Force, said the team learned after the first flight that the position and angle of where the two aircraft fly are critical factors in determining the quality of the research information that is collected.

"In the very first mission in 1998, we flew in a stacked formation but the data that we collected wasn't quite as good as what we had hoped for," said Haser. "So in 1999, we changed the flight so that the two aircraft would fly at 30-degree angle, about 60 miles apart, but at the same altitude, and we were able to get much better data. It's been that way ever since."

According to Haser, another reason the data has improved on each mission is because they have been able to have many of the same people on the flights and subsequently become more familiar with each other.

"Flying with foreign scientists aboard a U.S. aircraft is very different because they are not used to the normal Air Force rules," said Haser. "At first, you don't know what to expect from them, but the more you work with them, the better everyone is able to get in-tune with what the procedures are and what to watch for."

Convention Addresses Air Mobility Successes, Future

by Cynthia Bauer
Air Mobility Command Public Affairs

Courtesy of Air Mobility Command News Service

It was the largest convention ever for America's Air Mobility team. Military and civilian, active duty, Guard and Reserve and contractor representatives, almost 3,000 strong, met in Nashville, Tennessee on Nov. 7 through 10 for the 34th gathering of the Airlift/Tanker Association. The theme of this year's convention: "Our People at War."

The agenda included three keynote speakers and 34 professional development seminars. Seminar topics ranged from missions in support of Operation Enduring Freedom to the future of air mobility.

Gen. Tommy Franks, commander of U.S. Central Command, delivered the first keynote speech on Enduring Freedom. He had come to the convention to personally thank those responsible for airlift and air refueling. He also came to say that the United States is in the Global War on Terrorism until the war is won. "We're going to go where we have to go, we're going to stay there as long as we have to stay, as long as it needs to go on," Franks said.

Franks recalled that on Sept. 11, 2001, he landed in Souda, Crete, on his way to Pakistan, and learned about the terrorist attacks from a television broadcast. He said he called his friend, Gen. John W. Handy, commander of U.S. Transportation Command and Air Mobility Command, because he needed a little help.

"Ever since that day, I have reminded myself because of all that you have done for me, for our command, for your command, for the United States of America, we owe you, I owe you," said Franks.

As the second keynoter at the conference, Handy tallied AMC successes during the war on terrorism. These successes included more than 27,000 air refueling, airlift, aeromedical as well as senior

leader and presidential support missions, he said. More than 1,350 patients were airlifted out of Afghanistan as of Nov. 8.

"We have never had an emergency evacuation waiting for lift, ever. It's a victory so far from the Afghan war," he said.

Handy said that because of tankers, not one U.S. fighter or bomber mission went lacking for fuel. The tankers were key to some historic events for the Air Force including the longest B-2 mission of 44.3 hours, and the longest F-15 combat sortie of 15.5 hours.

And airlift became an instrument of national will. Handy said the first of the 2.4 million humanitarian daily rations were dropped in Afghanistan the first night fighter bombers dropped munitions. He said the historic high-altitude HDR airdrop erased any doubts of U.S. intentions to battle the terrorists and help the Afghans and the Northern Alliance.

Handy also shared his vision from his command "Flight Plan" on people, global mobility task force, modernization, and ingenuity and information technology. He said people are his number one priority. He said the AMC staff is committed to working hard every day to find ways to appropriately take care of people in the command and their families. However, the high operations tempo has him worried.

"The marathon we're in doesn't allow for water breaks," he said. "It doesn't allow us to slow down and walk at any particular time. It doesn't even allow us to, heaven forbid, quit. We are locked in the unique marathon of the Global War on Terrorism until the absolute finish. As men and women of Air Mobility Command, I will tell you, as a team, we will finish."

Chief of Staff of the Air Force Gen. John P. Jumper provided his views of mobility in the last session of the convention.

On air mobility force packaging, Jumper said part of the emerging Global Mobility Task Force is to develop the air mobility community as the center of excellence for expeditionary operations.

"And we're going to set up this center of excellence through what already happens at Phoenix Readiness (at McGuire Air Force Base, N.J.) and train commanders of support operations to run large tent cities. We're going to standardize that skill throughout the Air Force," he said.

He talked about the "Smart Tanker" as solving the problem of getting target-quality information to the fighters and bombers, and as a product of effects-based thinking. Jumper said,

"I sat bolt upright in bed about a year ago and said 'Good God, what's always there?' It's the tankers. And where do we put them? We put them as close as we can possibly get them (to the battle) so they can refuel the short-legged airplanes and get them targeting (information) ... Why don't we take that and make it a network?"

And that vision is now becoming reality for the Air Force.

Jumper went on to say, "You know, we can talk about platforms and the great job we do all we want, but in the end, it's the people who make all this stuff happen ...

"When you wear the uniform of the nation, you symbolize the pride, the strength, the power of this nation to all other Americans," he said. "I am proud of you. Look at what you have done. Look at what we are doing, not just as an Air Force, but as a joint force. Not just as joint force, but as part of coalition and alliances. Be proud of yourselves, tell your people you're proud of them." (See next page for photos)

Airlift/Tankers Association Conference,
7-10 November 2002, Nashville, Tennessee


Air Force C2 & ISR
The Science of Control to Enable the Art of


AIRLIFT/TANKER ASSOCIATION
2002


Testers (BRAT VX)

10 Second Risk Management

By Lt Col Chris Cote
512th Airlift Wing

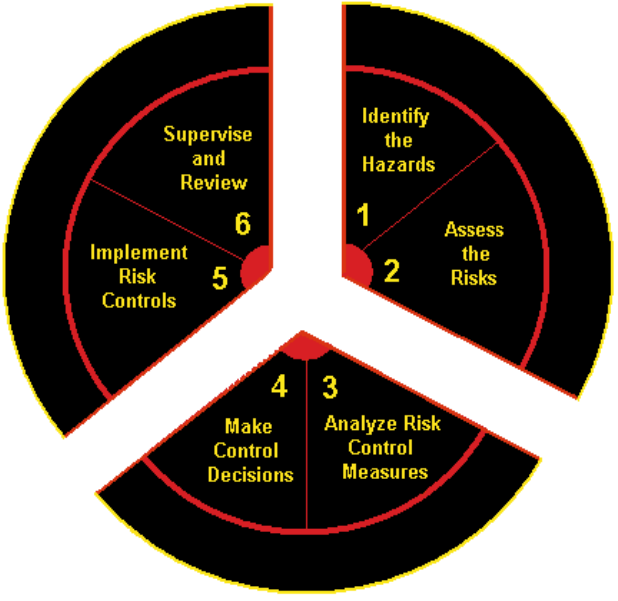
We have all had our introduction and training in the ORM program. Many wonder how to apply the program in every day life. Many people have been doing risk management all their life and some have not. ORM looks complicated but can be applied quickly and easily in ten seconds or less. You can identify the vast majority of serious hazards, figure out how to control most of them and put your plan in motion in under 10 seconds.

Most of us know people who are "accident prone." Do you believe there is such a thing as being accident prone? I believe people who frequently have accidents are poor managers of the risks they encounter in their daily lives. I don't believe "Stuff Happens". In many cases an individual has some control over their environment and can prevent "Stuff" from happening to them. I will illustrate my point with some actual mishaps.

Recently a deployed troop wanted to eat some soup. He placed a can of soup (unopened) on a pot belly stove in the tent. After heating the soup, he opened the can. While opening the can it exploded, spewing mostly on his face; to include his forehead, bridge of his nose, his right eye region, right cheek and a portion of his neck. The member sustained first and second degree burns. He was wearing glasses which spared his eyes from being burned. Is this a case of "Stuff Happens" or did he create a hazard for himself when he deviated from his normal method of heating soup?

Three friends wanted to visit another friend 90 miles away. On 30 December around 2230 the three of them drove to their friend's house and arrived there around midnight. They all sat around talking for 2 or 3 hours and then fell asleep. They wanted to be home early on 31 December so they awoke around 0600 and headed home. The front passenger seat occupant was wearing a seatbelt. The driver and the back seat passenger were not wearing seatbelts. Both passengers were asleep. They were 25 miles from home when the driver fell asleep. The vehicle was traveling at approximately 70 mph in a 55 mph zone. The vehicle veered off the road, struck the guardrail and then came to rest against a pole. The driver was partially ejected and later died due to his injuries. The front seat passenger lungs were both punctured, his left clavicle was fractured and he received 8 stitches to his head from a cut. He also had a concussion. The rear seat passenger received a broken leg and other minor cuts and bruises. The root cause of this mishap occurred when they planned the trip without allowing sufficient rest.

Now many of you could see the danger in each of these scenarios as they unfolded and some did not. Ten second risk management can be used as a tool to discover and then manage, minimize or even eliminate the risks by taking control of the situation at hand. Let's take the familiar six step risk wheel and break it into three sections.



In the next example we will accomplish each pair of steps in only a few seconds. In this short period of time you should be able to identify all of the most serious hazards, identify how you can reduce the hazards by managing, minimizing or eliminating risk and place your plan into action.

Look at this photo of the view out the front of a pickup truck. In just a few seconds what do you see?

1. Identify the Hazards: Limited visibility due to the fog and a hill. You are unfamiliar with this road and have no idea what is on the other side.

2. Assess the Risks: Due to the fog and hill obstructing your vision you will have difficulty seeing traffic or obstructions on the road.

Now still using the photo above run the next two steps. Remember to take only a few seconds.

3. Analyze Risk Control Measures: You have no control over the weather but you can control your speed.

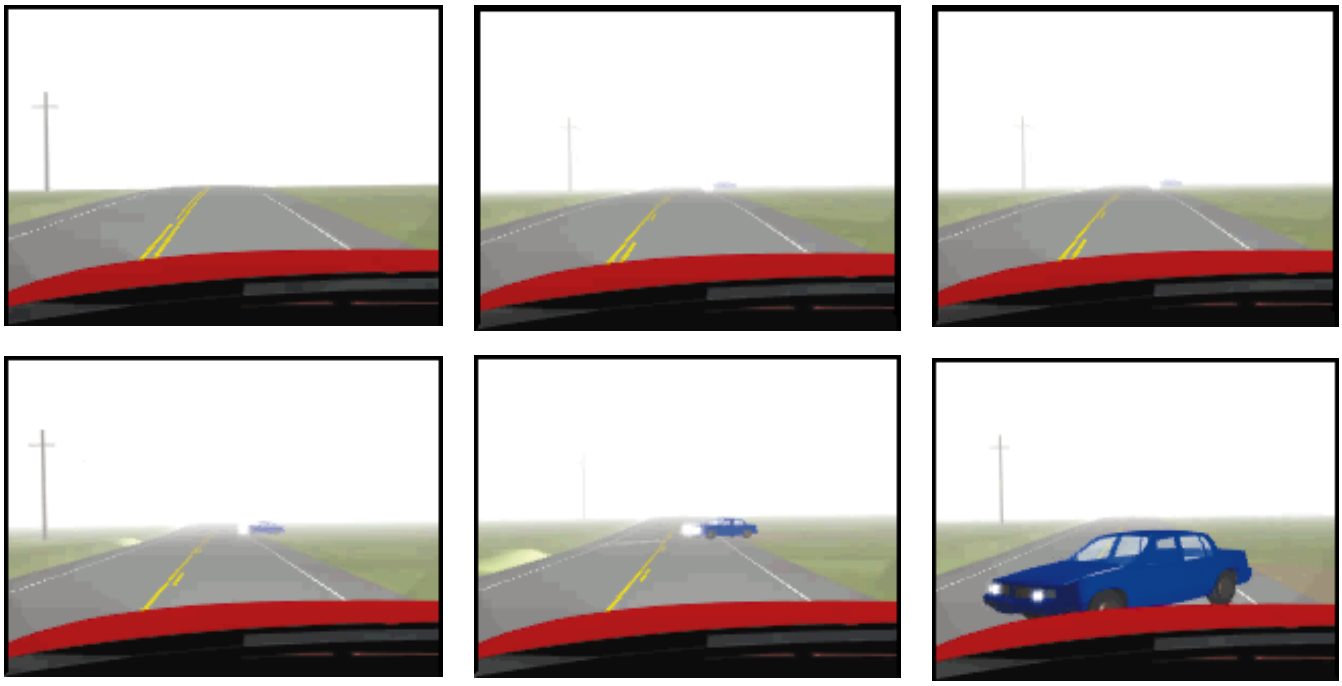
4. Make Control Decisions: Slow down. This is the only option available to you.

Finally, run steps 5 & 6:

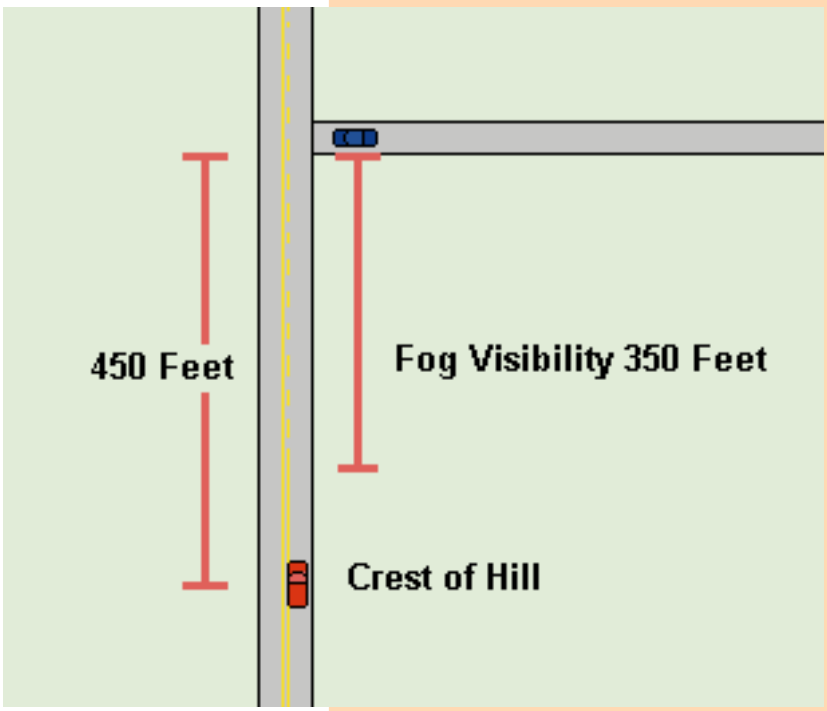
5. Implement Risk Controls: Slow down to a safe speed.

6. Supervise and Review: Assess whether or not your new speed is slow enough for the conditions and adjust as needed.

Now all that can be accomplished in less than ten seconds. Now let's see what the consequence of driving too fast in foggy conditions can result in. Look at this series of images taken from this accident simulation.



In the above scenario, the driver did not adjust his speed for the conditions. The posted speed limit on this road is 55 mph. The driver was doing 75 mph. In the diagram below you see an overhead view of the accident scene.



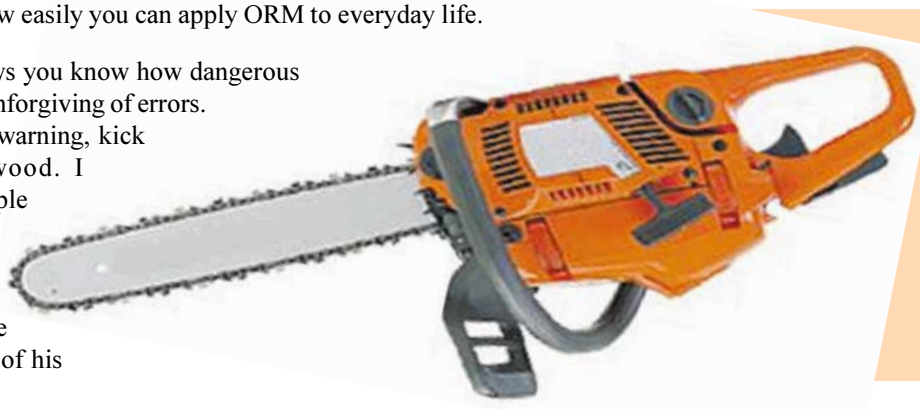
From the crest of the hill to the intersection is 450 feet. The visibility in the fog is only 350 feet. In the chart below stopping distance at 55 mph is 403 feet which includes 201.6 feet to react and 201.9 feet to actually stop the vehicle. At 75 mph the total stopping distance is increased to 650 feet. Both of these distances exceed the total distance you can see in the fog. If the driver had reduced his speed to 45 mph, the stopping distance would be 300 feet, leaving an extra 50 feet.

Initial Speed	Reaction Distance	Deceleration Distance	Total Stopping Distance
35 mph	128.3 feet	81.7 feet	**210 feet***
45 mph	165.0 feet	135.2 feet	300 feet
55 mph	201.6 feet	201.9 feet	**403 feet***
65 mph	238.3 feet	282.1 feet	520 feet
75 mph	274.9 feet	375.6 feet	650 feet
80 mph	293.3 feet	427.3 feet	720 feet
90 mph	329.9 feet	540.8 feet	870 feet
100 mph	366.6 feet	667.7 feet.	1034 feet
*1999 officially recognized DMV reaction plus deceleration distances are given at: DMV			

The Department of Transportation has already measured the distances and calculated the maximum safe speed for this road at 55 mph based on clear, dry road conditions. In effect, they already completed the six steps for you. All you need to do in those conditions is drive the speed limit or less. In less than ideal conditions use ORM and make the speed adjustment.

In this last example you see just how easily you can apply ORM to everyday life.

If you own one of these saws you know how dangerous they can be. This tool is very unforgiving of errors. Chain saws can, without any warning, kick back as you are cutting wood. I personally know of two people who had a chainsaw kick back and hit them in the face. One was hit right between the eyes at the bridge of his nose and the other just to the right of his right eye.

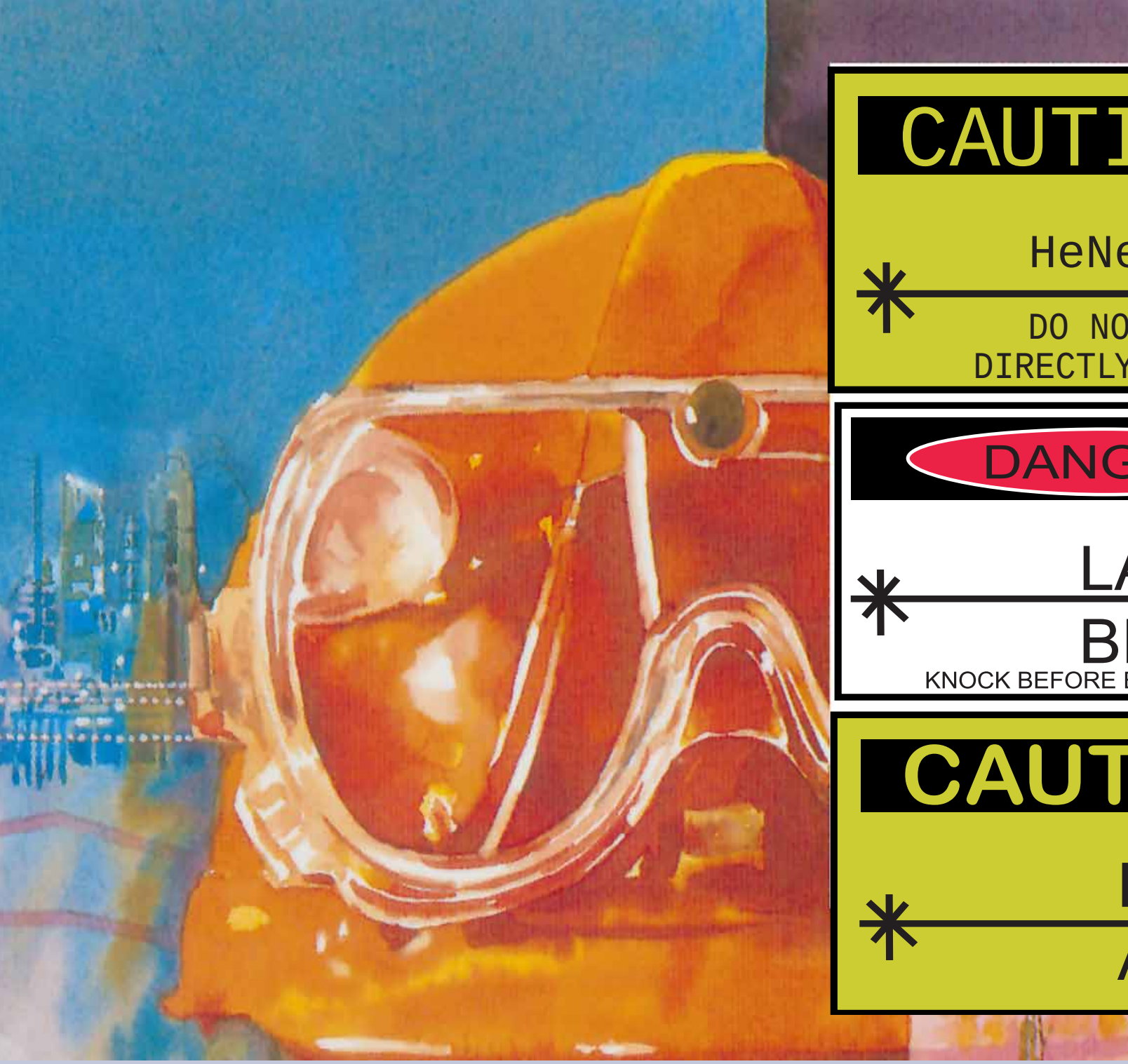


The last time I needed firewood I ran the six step process in less than ten seconds and…

Hello, Acme Firewood? I need a cord of wood delivered to 123 Safety Lane.

Now that is ORM in its simplest form! I assessed the risks, assessed the control measures and decided to eliminate the risk by ordering wood to be delivered to my house. The reward for cutting my own wood was not worth the danger.

ORM can be applied in every part of your life, work, recreation, vacation, and your drive home from the office. Each activity can present hazards you must react to. The ORM process can be used hundreds of times a day to deal with all the dangers life presents you. Take control of what you can and don't let "Stuff Happen" to you!



Laser Safety

By John Schatz, Safety Management Consultant

Every day, people see more and more uses of lasers derived from military applications. Such applications may include ranging and training to commercial uses involving scanners, audio, video (CDs and DVDs), laser pointers and laser printers to industrial uses such as welding and cutting and finally entertainment such as laser light shows. Laser applications seem to be endless but what are lasers and are they safe?

LASER (Light Amplification by Stimulated Emission of Radiation)

Lasers are different from normal light in the following areas:

- **Monochromatic**
  - All light is one wavelength or color
- **Directional**
  - Laser beam does not expand as quickly as other light
- **Coherent**
  - All waves of light are generated in phase with each other
  - The wave crest and troughs are "locked" together

Industry Standards

A laser generates a beam of very intense light; therefore, lasers can be very dangerous. The Laser Institute of America (LIA), along with the American National Standards Institute (ANSI) created standards regarding laser safety called the ANSI Z 136.1 standard "Safe Use of Lasers". These standards break down lasers into two very broad categories: " Beam Hazards" and "Non-Beam Hazards". Under the category of "Beam Hazards", the principal danger is to your eyes. In fact, a popular safety joke sign is "Danger! Laser--Cover Remaining Eye."

The standards also break down lasers into the following four (4) classes.

Class 1 – Lasers that are considered to be incapable of producing damaging radiation levels during normal operations or maintenance.

Class 2 – Lasers that emit in the visible portion of the spectrum (400-700 nanometers) and being visible then eye protection is afforded by the aversion response to bright light, which includes the blink reflex.

Class 3 (Medium Lasers) - class three is divided into two subclasses, 3A and 3b. The lasers in this class may be hazardous under direct and specular reflection viewing conditions.

Class 4 (High Power Lasers) – The lasers in this class are hazardous to eyes and skin not only from direct and specular reflections but also from some diffuse. These lasers can be fire hazards and may produce laser generated air contaminates and hazardous plasma radiation.

Caution: Protect Your Eyes

Why are the eyes so vulnerable? As eyes are magnifiers of light, when this very intense light (laser) hits the eye, the energy can be magnified 100,000 times. When laser energy and eyes meet, the results can range from complete blindness to the formation of cataracts. Although eyes are a primary focus of vulnerability, some lasers can cause damage to the skin in the form of erythema (sunburns) and other thermal skin burns.

Protection from the Effects of Laser Radiation

How do you protect yourself from harmful effects of laser radiation? The answer lies with the development of engineering controls, administrative controls, and procedural controls (laser safety program).

Engineering Controls

Under the engineering controls, you can look at things such as confining the beam to a small enclosure to prevent contact with laser radiation. You can also place interlocks so if the enclosure were accidentally opened, the laser would shut down. If that is not possible, you should limit the laser to a single room and place strobe lights when "lasing". You should always have an emergency power shut off switch that can be seen easily and that can be accessed easily in case of an emergency. If your laser beam needs to shoot outdoors "zenith" (straight up) and you're worried about aircraft, you can expand the beam to bring the laser energy down to eye-safe levels. Another control is the use of laser safety glasses to protect your eyes from the laser energy; the glasses are usually specific for a certain type of laser. For instance, glasses made for a laser beam that lazes in the Ultraviolet spectrum would not be appropriate for a laser that lazes in the Infrared spectrum.

Administrative Controls

Under administrative controls you will want to place signs indicating what type of laser you have and what class of laser it is. Again, when you are shooting a non-eye safe laser zenith into the sky there are many issues you need to address with the authorities that govern the sky such as the FAA and the US Air Force. Both groups have specific protocol and forms to be completed. Once you're given an okay, the governing body will issue a NOTAM (Notice to Airmen) to warn pilots not to fly over where you are shooting your laser.

Procedural Controls

When people work with Class 3B and 4 lasers a laser safety program should be put in place and each laser shall have a Standard Operating Procedure (SOP) addressing specific hazards associated with each laser. Some of the elements of the program include the following:

- Type of Laser
- Classification of Laser
- Laser Hazard Classification Calculations
- Inspection Frequencies
- Beam Management
- PPE issues
- Posting of Signs and Labels
- Required Control Measures
    - **o** Access controls
    - **o** System controls
    - **o** Personnel controls
- Emergency Instructions
- Management of Ancillary Hazards
- Training
- Baseline Eye Exams
- Laser Incident Management.

By establishing such a program, you force yourself to go through a safety job analysis, that is, a thought process that will assist in bringing forth possible safety problems and solutions.

Up to this point we have covered primarily the beam hazards; however, as indicated earlier in the article there are also "non-beam hazards" associated with lasers. One non-beam hazard that tops the list is an electrical hazard. Lasers usually require lots of electricity to operate; thus it is a prime concern. In fact, **electrocution** is the leading cause of laser-related death; therefore, it is important for you to use and to follow all of the electrical safety guidelines. Make sure you lock out and tag out the equipment before performing maintenance on exposed circuits and always be sure to de-energize all capacitors.

Another non-beam hazard associated with laser work is that of laser generated air contaminates. When using a laser to cut different materials one must be sure to properly ventilate to prevent exposure to toxic "off-gassing" by the material. Some material, when superheated, will "off-gas" toxic chemicals such benzene, styrene, and some heavy metals. If used in a medical application, viral agents can be airborne while the laser is contacting tissue; examples of these include HIV DNA, Staphylococcus aurerus, and Escherchia coli.

Lasers have helped people in many ways and new applications for lasers are discovered almost daily. However, we must remember that because they are so powerful it is critical that operators of lasers abide by the safety regulations and put safety in practice at all times when using this magic light.

C.R. TERROR

The Bonetti INCIDENT

"I must have it, Tessie!" announced the Sultan of the Skyways, one C.R. Terror, as he looked longingly at the scarlet scarf in the window of Dino's Dandy Department store. He imagined how magnificent he would look in the officer's club with the silken swath wrapped around his neck. It was, he had decided, a scarf worthy of being worn by a man of his importance.

He strutted into the store and rapped on the counter with his silver-tipped walking stick. "The red scarf in the window!" he boomed at the salesman who scurried to help him.

"A wonderful choice," said the clerk. "We just got those in. It's a genuine Bonetti, you know! Direct from Italy. The latest thing in Europe!" He leaned closer to Terror and said in a conspiratorial whisper, "Keep this under your hat, but a friend of mine has a friend in the palace and he told me that this is what Prince Charles is getting from the Queen for Christmas this year!"

"The Prince!" repeated the Airlift Ace to Tessie. "Well, that settles it! It must be mine! No need to wrap it. I will wear it now!"

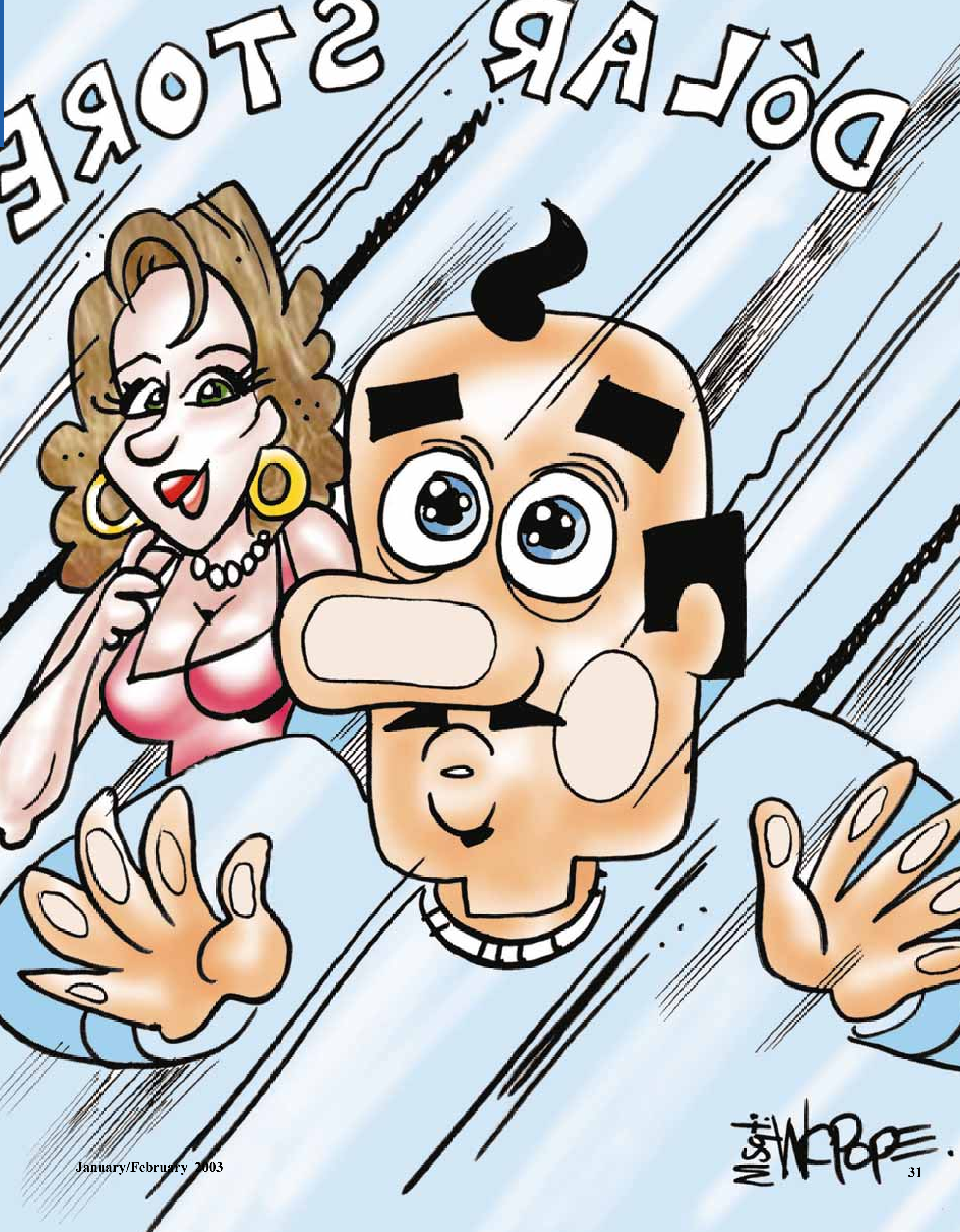
As Terror walked along the promenade with the scarf wrapped around his neck, he looked at himself in every shop window they passed. "Don't you think it makes me look…well…royal?" he asked Tessie.

"As in royal pain in the…..?" mumbled Tessie.

But she never finished her comment for at that precise moment, a seagull, obviously unimpressed by the kingly bearing of our hero, decided that the tossled toupee of the Flatulent Flyer looked like a fine place to raise a family. As the gull settled his bottom in the top of C.R.'s store-bought hair, the Petulant Pilot began to shoo him way. Unwilling to vacate his new home, the gull resisted. Terror, equally unwilling to have the gull as a permanent fixture in his manly mane, began smacking at the bird with his walking stick. The gull, miffed at being evicted from his new abode, took aim at the Portly Pilot, deposited a token of his irritation on the toupee in question, scooped up the crimson scarf and flew away.

"Come back here with my Bonetti!" shouted the Addled Aviator.

Watching the bird fly away, he ran to


DÒLAR STORE
MSgt. WCPope

the nearest pay phone and called the MPs. "I have been assaulted! Robbed! Vandalized!" he blustered. I want the perpetrator arrested immediately and my property returned. I want my Bonetti back!"

"What is the license plate number on the Bonetti, sir," asked the Sergeant calmly.

"What license plate? You don't need a license to have a Bonetti!" bellowed the Baffled Bumbler.

"We need a description of the suspect, sir," said the Sergeant.

"He was white. About a foot and a half tall. Feathery tail!"

There was a momentary silence on the other end of the line. "Feathery tail, sir? Foot and a half tall?" said the Sergeant. "Ummmmm…sir? May I ask just what stole your Bonetti?"

"A seagull, you nincompoop!" Terror yelled, his face not unlike the color of the scarf in question.

"Sir? We can't put an APB out on a seagull!" the Sergeant said, as he muffled a chortle.

The Fabled Fumbler cursed the incompetence and the ancestry of the Sergeant and slammed the phone down.

Still mumbling under his breath about the ineptitude of the constabulary, Terror began his mission into the C-130 with his usual lack of finesse. His crew breathed a sigh of relief when they finally began flying through the footless halls of sunsplit clouds and they settled back for what they hoped was

an uneventful flight.

"Why the pox on the police, Major?" asked Sammy.

"Samuel m'boy, it was a criminently ghastly sight," the Airways Airdale complained to his co-pilot and told him about the avian perpetrator, the loss of his precious Bonetti, and the obvious ignorance of law enforcement in general and the Sergeant in particular.

When his co-pilot finally felt he could speak without breaking into gales of laughter, he managed to ask the Pitiful Pilot, "What exactly IS a Bonetti?"

"It's THAT!" Terror roared, pointing to the sky in front of the cockpit.

What Sammy saw was a flock of seagulls. One large bird at the front had a ruby scarf draped around his neck and what could only be termed a smug look on his feathered face.

The Rotund One was livid. "Come back here with my Bonetti!"

The seagull remained on course — unconcerned.

"You felonious feather duster!" boomed the Pompous One, as he made a move to follow the flock.

"Major!" stuttered Blinky. "You know how dangerous a flock of birds can be! We could be in big trouble if one got sucked into the engine!"

"They are no match for my pilotdom proficiency!" shouted the Tanker Terror as he took the plane into a series of slow dips and rolls, hot on the tails of the feathered flock.

He could see nothing but the red swath around the neck of an impudent gull and vowing to get his Bonetti back "come hell or high water," he took the plane into a dive.

As Sammy watched the ocean below loom below him, he began to think that "high water" was a pretty safe bet. "Majorrrrrrrrrrrr!" he stammered grabbing for the stick.

Then just as suddenly as he took the plane for a dive, Terror pulled up. Sammy, white as a sheet, opened his eyes to see the scarlet scarf draped across the nose of the plane, half obstructing the view.

"I got it!" the Terror of the Airways boasted, elated at his fortune. But he watched crestfallen as the scarf was caught in the wind and began to slip away again.

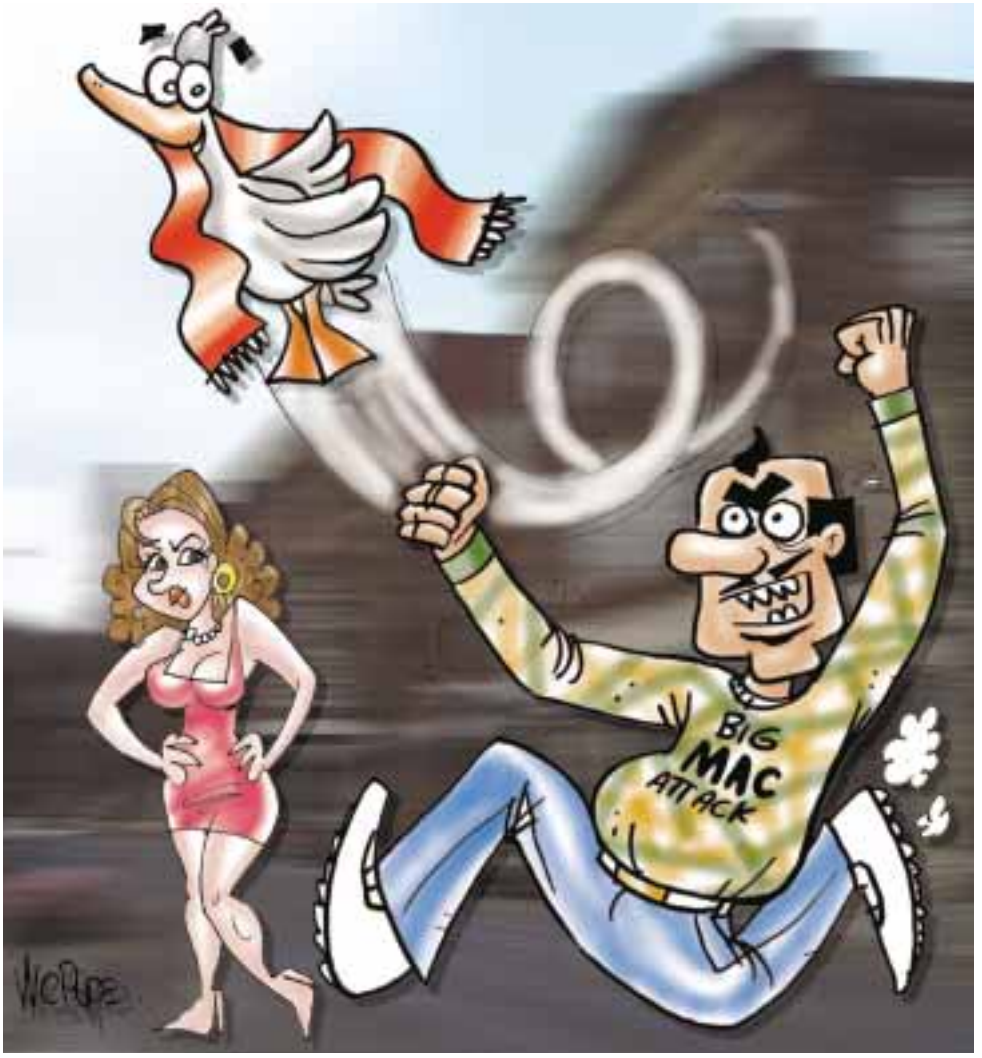
Terrified that the scarf would be sucked into the engines, Sammy screamed again.

"Not to worry, m'boy!" soothed The Round One as he guided the Big Boy back to the base.

When the plane landed again safely, Terror's crew sat silently for a long while, waiting for their heartbeats to return to normal and the blood to return to their white-knuckled fingers.

As they disembarked, they were greeted by their livid commanding officer. "Terror! You will be sweeping hangars for the rest of your career! You won't even fly a kite if I have my way!"

"But sir, I had no choice," protested the Portly Pillar of Pilotdom, bewildered at the commander's outburst. "It was," he said with reverence, "a genuine Bonetti!"



Flying Hour Milestones

12,500 Hours

433 AW, Kelly AFB, TX
MSgt Daniel McFall

8,500 Hours

9 AS, Dover AFB, DE
MSgt Stanley J Wilcox

77 ARS, Seymour Johnson AFB, NC
Lt Col Kent B Mckinnel

133 AW, St Paul, MN
Lt Col Steven T OBrien
Lt Col Roy J Shetka

300 AS, Charleston AFB, SC
SMSgt Frederick Geist
SMSgt Timothy E Simmons
SMSgt David R Turner

313 AS, McChord AFB, WA
SMSgt Brian E Zar
MSgt John E Howard

701 AS, Charleston AFB, SC
MSgt Benjamin E Alexander

7,500 Hours

4 AS, McChord AFB, WA
SMSgt Terance L Frye
SMSgt Mark S Kitchen
MSgt Erith A Hawkins
TSgt Mark E Gray
TSgt Kirt E Thompson

77 ARS, Seymour Johnson AFB, NC
Lt Col William R Maguire

133 AW, St Paul, MN
TSgt Kenneth L Byro

313 AS, McChord AFB, WA
SMSgt David W Stutts
MSgt Brian E Cooper
MSgt Randy Lewis
TSgt Curt Rickard

701 AS, Charleston AFB, SC
MSgt Darryl M Brown

6,500 Hours

4 AS, McChord AFB, WA
TSgt William E Habenick
TSgt Darrin M McClure
TSgt James B Raring

77 ARS, Seymour Johnson AFB, NC
Lt Col Randolph Remorenko
Lt Col Stephen R Stewart
Lt Col John H Williams
CMSgt Gerald R Snyder

97 AS, McChord AFB, WA
Maj Edwin R Woodward

99 AS, Andrews AFB, MD
Maj Joe C Snell

133 AW, St Paul, MN
Lt Col William C Johnson

Milestones

182 AW, Peoria, IL
Lt Col Theodore H Palmer

300 AS, Charleston AFB, SC
Lt Col Allan L Swartzmiller
CMSgt Nolan L Mole
MSgt Brad C Day

701 AS, Charleston AFB, SC
Maj Michael W Gault
CMSgt Dwain B Dodd
TSgt Robert J Martin

5,000 Hours

4 AS, McChord AFB, WA
Maj Joseph E Overbeck
CMSgt Louis E Saurs
MSgt Gary R Barnes
MSgt Keith J Schnug
TSgt Geraldo P Moore
TSgt Richard E Tallman

77 ARS, Seymour Johnson AFB, NC
Col James L Melin
Lt Col Mark S Chenier
Lt Col Philip S Fallin
Lt Col Michael A Fountain
Lt Col Robert N Maddox
Lt Col Darrell A Taylor
Maj Todd L Chaney
Maj Joseph K Smarsh
TSgt Barry R Bradley
TSgt Garrick E Powell

97 AS, McChord AFB, WA
Maj Dale R Huhman
SMSgt David L Kist

99 AS, Andrews AFB, MD
Lt Col Herbert J Finch
Lt Col Joseph N Griffin
Maj Michael L Knudson
TSgt Patrick W Palmer
TSgt Michael A Whitton

133 AW, St Paul, MN
SMSgt Joseph J Lendway
TSgt Richard J Krivanek

143 AW/SE, North Kingstown, RI
CMSgt Robert J Wilkinson

182 AW, Peoria, IL
Lt Col Scott A Swanson
CMSgt Richard A Barnick

300 AS, Charleston AFB, SC
CMSgt Stephen B Brunson
MSgt Douglas L Guthrie
MSgt Kenneth A Whetsell

313 AS, McChord AFB, WA
CMSgt Ronald A Campeau Jr
SMSgt Terrance L Philon
MSgt Earnest J Barrera

317 AS, Charleston AFB, SC
MSgt Charles E Akins
MSgt John F Bartosh

433 AW, Kelly AFB, TX
Lt Col Marshall Moorman
CMSgt Augustin DeFrancesco
MSgt Joseph M Jannell
MSgt Jaime Santillan

463 AG, Little Rock AFB, AR
SMSgt William H Yeary
MSgt John S Schroeder

MSgt Donald R Thompson

463 AG/OSS, Little Rock AFB, AR
MSgt Donald R Thompson

701 AS, Charleston AFB, SC
Maj Julian S Blackwell

3,500 Hours

77 ARS Seymour Johnson AFB, NC
Lt Col Jeffrey A Fisher
Lt Col Michael F Smith
Maj Robert D Aplington
Maj Albert A Croom
Maj David J Diserafino
Maj Douglas A Haberman
Maj Nicholas Hayes
Maj Robert A Krueger
Maj Stephen L Lanier
Maj Ewen H Lennon
Maj Michael L Morningstar
Maj Scott E Patnode
Maj Sam Shmays
SMSgt Sean P Martin
SMSgt Donald A Templeton
MSgt William K Norris
MSgt Randal N Palumbo
MSgt Tony H Parris
TSgt Rodney S Smith

91 ARS, MacDill AFB, FL
Lt Col Thomas W Connelly
Lt Col Joel S Reese
Maj Robert B Kinney

97 AS, McChord AFB, WA
Maj James B Finney
Maj Diego M Wendt
Capt David E Denney
CMSgt Lawrence J Wise-Erickson

99 AS, Andrews AFB, MD
Lt Col Joseph C Miller
Lt Col Scott J Mischo
Maj Benjamin L Auten
MSgt Vickie J Helland
MSgt Armando V Visitacion
TSgt Steven R Quickstad

133 AW, St Paul, MN
Maj Kevin C Anderson
Maj James K Bixby
Maj Michael D Croghan
Maj Daniel E Gabrielli
Maj Brian E Geronime
Maj Kirk A Jensen
Maj William N Pierce
Maj Anthony C Sasso
Maj James R Treutel
CMSgt David J Mach
SMSgt David C Coldren

166 AW, New Castle, DE
Maj Chris Toensing

182 AW, Peoria, IL
Col Barry W Beard
Col William P Robertson
Lt Col Jerome J Goodin
Lt Col Jesse L Pippins
Maj Douglas W Applegren
Maj Christopher Caine
Maj Terry E Feather
Maj David A Peiffer
Maj Troy A Roberts
Maj Richard L Wainman
SMSgt Gary W Babcock
SMSgt Kelly G Delaney

300 AS, Charleston AFB, SC
Maj Mark M Bauknight

Milestones

Maj Westel W Willoughby
MSgt Monica Flores-Reeder
TSgt John G Nevitt
TSgt Roland M Newbold
TSgt Peter J Shovey

310 AS, MacDill AFB, FL
Maj Gregg M Palmer

313 AS, McChord AFB, WA
SMSgt Keith Hudson
MSgt Lance P Gustafson
MSgt Norman Skua
MSgt Richard Spence
TSgt Barry Peele
TSgt Timothy Tweet

317 AS, Charleston AFB, SC
Maj John W Rodgers
Maj Trace S Williams
Maj Michael Zaccardo
TSgt Alan C Luchay
TSgt Gregory K Scott

433 AW, Kelly AFB, TX
SMSgt Thomas W Robinson
MSgt Robert Adam
MSgt Robert Kusterer
TSgt Michael E Day
TSgt Dave Franzoni
TSgt Patrick McMahon

701 AS, Charleston AFB, SC
Maj Scott M Rider
Maj John M Riordan
Maj Douglas T Slipko

2,500 Hours

77 ARS, Seymour Johnson AFB, NC
Maj Jason D Biethman
Maj Christopher K Connolly
Maj Brian S Davis
Maj James P Johnson
Maj Eric A Jorgensen
Maj Randolph E Pharr
Maj Scott M Teel
Capt Richard D Reneau
MSgt Mark E Mcelmurry

91 ARS, MacDill AFB, FL
Maj Kenneth G Ernewein
Maj Daniel M Gillespie
Maj Scott L Musser
Capt John H Armstrong
MSgt Chris D Zaher

97 AS, McChord AFB, WA
Maj Mary K Kunzie
SSgt Michael J Mundell

133 AW, St Paul MN
Lt Col Michael K Hepler
Maj Andrew J Burda
Maj Jason C McDonald
Maj Michael S Pederson
Maj Vincent W Schons
Maj Paul K Shadle
Maj Dana S Wilson
Capt Ryan G Nylander
MSgt Nicole A Fagula
MSgt Daniel J Tracy
TSgt Christopher J Hoffman

166 AW, New Castle, DE
Capt Christopher Guffey

182 AW, Peoria, IL
Lt Col Scot O Decker
Lt Col Steven J Konie
Lt Col Daniel M Mini
Maj Michael D Bollwitt
Maj Stewart P Holloway
Maj Scott D Livermore

Maj Daniel R McDonough
Maj Matthew J Miggins
Maj Peter A Sensenbrenner
Maj Scott A Wientjes
Capt Colin P Reilly
Capt Jeffrey S Teuscher
MSgt Aaron D Jones
MSgt Terry L Jones
MSgt Michael J Killen
MSgt Joseph B Tucker
TSgt Tony L Frederking

300 AS, Charleston AFB, SC
MSgt Phillip J Johnson
MSgt Howard P Mair
TSgt Wilson A Ham
TSgt Beverly J Thomas

310 AS, MacDill AFB, FL
SSgt Tony J Busquets

313 AS, McChord AFB, WA
TSgt James S Alexander
TSgt Christopher Cohen
TSgt Alton Staton

315 AES, Charleston AFB, SC
CMSgt Myron Christopher
MSgt James R May
MSgt George W McKoy
MSgt Gary F Thompson

317 AS, Charleston AFB, SC
Maj James A Caldwell
Maj Edward W Fleuren
Capt Kurt A Galchus
Capt Malcolm G Quincy
MSG Michael L Miles
TSgt Eugene F Rorie
TSgt Deborah K Ross

433 AW, Kelly AFB, TX
Maj Jeffrey Mulvihill
TSgt Eric Martinez
TSgt Ernest R Urrutia
MSgt Jeffrey J Fox

701 AS, Charleston AFB, SC
TSgt Russell B Bennett
TSgt William E Raymond
SSgt Bryan E Dubois

1,500 Hours

1 HS, Andrews AFB, MD
Capt James C Zegel
Capt Brandon W J Deacon

77 ARS, Seymour Johnson AFB, NC
Capt Corey T Brown
Capt Danny K Conway
Capt Gerald W Turner
TSgt Kenneth N Fallin
TSgt William A Rigdon
SSgt David H Chandonnet

91 ARS, MacDill AFB, FL
Capt Brian D Fallis
TSgt Mark W Harper
SSgt Sara L Faircloth
SSgt Micheal S Fatone

97 AS, McChord AFB, WA
MSgt Timothy J Sertich
TSgt Kim C Fabian
TSgt Brian S Horton
TSgt Heather R Latimer
SSgt James C Madrid

Milestones

99 AS, Andrews AFB, MD
TSgt Stephen D Hellwich
SSgt Kevin D Thompson
SSgt Michael P Vallee

133 AW, St Paul, MN
MSgt Mark E Norman
TSgt Brian K Goebel
TSgt John E Green
TSgt Jason M Stumph

166 AW, New Castle, DE
MSgt John Sullivan

182 AW, Peoria, IL
Lt Col Mark D Auer
Lt Col George W Obryan
Lt Col James N Roles
Lt Col Barton W Welker
Maj Marc A Augustave
Maj Dennis E Baker
Maj William K Berry
Maj Bruce C Briney
Maj John C Graybeal
Maj Rex W Langham
Maj Frank J Melchiorri
Maj Dean A Meucci
Maj Keith E Rigdon
Capt Jeffrey A Goodale
Capt Jeffrey S Herrmann
Capt Patrick J Ober
Capt Tracy N Speck
2Lt Eric H Dolan
SMSgt Steven J Pyszka
MSgt Laura C Nieman
MSgt Frank Ochoa
MSgt Jeffrey A Rennick
MSgt Cyrus D Snider
MSgt Matthew H Stone
MSgt Todd M White
MSgt Matthew J Weghorst
TSgt Jeffrey J Lemaire
TSgt Joseph G Rudebeck

310 AS, MacDill AFB, FL
SSgt Darryl E Armistead

313 AS, McChord AFB, WA
MSgt David Lewis
MSgt Dana S Whitfield
TSgt Craig E Johnson
TSgt Robert Withrow
SSgt Phil Derenski
SSgt Regina Rollis
SrA Eric M Olson

315 AES, Charleston AFB, SC
Lt Col Winifred Butler
Lt Col Linda D Hanf
Lt Col Barbara A Werth
Maj Dona M Iverson
SMSgt April M Hamilton
SMSgt Richard E Henslee
MSgt Eric Beam
MSgt Frederick L Bennett
MSgt James R May
MSgt Teresa A Putman
TSgt Roland McKinney

317 AS, Charleston AFB, SC
Capt Edward A Baldridge

433 AW, Kelly AFB, TX
TSgt Mark Sherwood

463 AG, Little Rock AFB, AR
Capt Charles R Bredfield

POPE'S Puns