



ARMY GROUND RISK-MANAGEMENT INFORMATION

# Countermeasure

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JUNE 2002

**STOPPING  
Explosives  
ACCIDENTS**

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## CONTENTS

- 3 DASAF's Corner**  
Let's Make It A Safe Summer
- 4 Army Explosives Accidents**
- 6 Unexploded Ordnance**  
Recognition 101
- 8 Do The Right Thing**
- 10 Safety Alert Notice-120mm**  
Mortar
- 10 Ammunition Information**  
Notice (AIN) 40-02,  
Subj: M134
- 11 Safety Alert Notice-105mm**  
Howitzer
- 12 Investigator's Forum**  
Carry The Torch
- 14 NCO Corner**  
Sergeant Major of the Army  
Sends...
- 16 Tell Us About Your NCOs**
- 17 Training & Risk Management**  
Prepare, Be Aware, Be There
- 18 Safety Is Our Shared Mission**
- 19 News & Notes**  
Power Lawn Mowers Recalled  
GSA to Feds: Don't Talk and  
Drive  
Farewell  
Thanks
- 20 Keep Focused On Your  
Driving**



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## Let's Make It A Safe Summer

**S**o much has changed since we last focused our energies on summer activities. Many things taken for granted before last September have now acquired a deeper meaning, perhaps making us more reflective and mindful of how quickly danger can surface.

Our nation and world may have changed since the days of previous summers, but many of the hazards our soldiers face both on and off duty have not. Our civilians and soldiers are not only lost to terrorists and hostile fire, they die in accidents as well.

Accident rates traditionally rise when summer's fast-paced, high-energy activities are in full swing—both on and off duty. Field training activities intensify, basic training expands, Reserve Components accomplish their annual unit training, and units capitalize on improved training opportunities and flying weather. Increased exposure to common hazards associated with summertime activities must be met with a corresponding increase in our efforts to manage the risks associated with those hazards more effectively.

Off-duty POV accidents remain the number one killer of soldiers, and the summer months are the deadliest. From Memorial Day through Labor Day last year, we lost 37 soldiers in POV accidents. This summer, we have some new risk management tools to help us combat POV accident losses. "Drive to Arrive" POV accident prevention videos, as well as a third edition of our POV Risk Management Toolbox, are now available on the Safety Center website at <http://safety.army.mil>. Make sure your soldiers see the videos before heading out on the highways for their weekends of off-duty summer fun.

While POV accidents account for the majority of our losses, they aren't the only killers. Every summer, we lose soldiers to all types of hazards: plunging into cool waters to momentarily escape the heat of the summer sun, heat exertion during training activities, boats capsizing, and even insect bites. We need to ensure our soldiers are conscious of even the lesser-known hazards, such as insect/snake bites, and enforce appropriate controls.

The best weapons in this battle to keep soldiers safe during summer activities are your NCOs and risk management. Make sure your NCOs get the word out on common and not-so-common summer hazards, so that your soldiers can, in turn, make informed risk decisions. We must instill in everyone a keen sense of awareness of the tragic consequences of failing to effectively manage risks associated with both their on- and off-duty activities.

As commanders, leaders, and first-line supervisors, we each have a moral responsibility to devote time and attention to ensuring that this summer's activities are accident free. Leadership, training, enforcing standards, discipline, and applying solid risk management principles can help us accomplish this. We must each avoid complacency in dealing with summer's known hazards and be vigilant in identifying new hazards as missions and environmental conditions change.

This summer, let's strive for one more major change: Let's put an end to the summer season's infamous history of being one of the most significant accident-producing periods of the year. Doing so will help us preserve our readiness for combating those who would inflict harm on the people of our great nation and our allies.

Remember that a single word of caution about the hazards associated with swimming and boating activities, hot-weather training activities, drinking and driving, fatigue, road rage, failure to use seatbelts, etc., may save a life or prevent a serious injury. With your commitment, we can make this our safest summer season ever. 🇺🇸

**Train Hard, Play Hard—  
but Be Safe!**

**BG James E. Simmons**

# ARMY EXPLOSIVES ACCIDENTS



The U.S. Army Technical Center for Explosives Safety (USATCES) has recently completed an evaluation of Army explosives accidents and mishaps for the 5-year period FY 96-00. This evaluation was a follow-on to the FY 95-99 five-year study completed by USATCES in September 2000. The current review reaffirmed the findings from the previous study.



The FY 96–00 analysis identified 285 explosives accidents/mishaps. Two hundred and thirty-six of those accidents resulted in 274 injured personnel and 14 fatalities. The numbers show that training remains the number one activity where Army explosives accidents/mishaps occur. Of the 285 reported explosives accidents/mishaps, 202 (70.9%) occurred during training.

Human error remains the leading cause of all explosives accidents accounting for 164 (57.5%). A significant finding was that 74 (25.96%) of the accident reports did not actually identify a cause. Similarly, a large number of reports didn't identify the specific type of ammunition or explosives involved. Rather, only generic terms such as simulator, small arms, etc., were used. Human error most commonly involved failure to follow published procedures:

- Failure to wait the appropriate time before opening a jammed weapon.
- Failure to wear proper personnel protective equipment.
- Failure to employ/use munitions as intended.
- Failure to clear a weapon.
- Failure to properly secure ammunition and explosives.
- Failure to follow proper UXO handling procedures.
- Failure to remain cognizant of surroundings.

The most common types of ammunition involved in Army explosives accidents were pyrotechnics (85 accidents or 29.8%), small arms ammunition (78 accidents or 27.4%), followed by grenades and rockets. The root causes for these accidents include:

- Unauthorized tampering with pyrotechnic devices.
- Improper placement or use of the pyrotechnic device.
- Throwing or functioning the pyrotechnic device too close to personnel.
- Prematurely clearing stopped or jammed weapons.
- Failure to properly clear a weapon.
- Failure to properly identify a target, failure to properly safe a weapon, or improperly handling of weapons.
- Not accounting for dud grenades.
- Grenades not being fully in the bunker.
- Personnel located in the “back blast” area.
- Improper tiedown or securing of munitions during transportation.

To reduce the number of explosives accidents, all levels of Army leadership must become actively involved in explosives safety and ammunition/explosives accident prevention. Army leadership must ensure adequate procedures are in place to identify potential explosives safety hazards and implement mitigating measures to eliminate or reduce those hazards. The unit leadership must also hold personnel accountable for following established procedures, thus significantly reducing the number of Army explosives accidents/mishaps due to human error.

In closing, we would like to quote Brigadier General James E. Simmons, Director of Army Safety: *“Units that participate in tough, well disciplined training with technically and tactically competent leaders present have significantly fewer accidents.”*

The U.S. Army Explosives Accident/Incident 5-Year Summary FY 96-00, as well as the U.S. Army Explosives Accident/Incident 5-Year Summary FY 95-99, can be found on the USATCES website at <http://www.dac.army.mil/es/Default.asp?id=9>.

—Courtesy of USATCES Explosives Safety Bulletin, Vol. 13, Issue 2, March 2002, DSN 956-8804 (918-420-8804)

# Unexploded Ordnance

**U**nexploded Ordnance (UXO) hazards on the battlefield have an enormous effect on command and control decisions for battle planning. During Operation Desert Storm, there were 21 Army personnel killed and 53 injured as a direct result of handling/mishandling of UXO. UXOs are hazards, whether they are on the battlefield or in designated training areas. Personnel can lessen the danger of UXO hazards by being able to recognize the hazard and strictly follow the basic safety guidelines.

By definition, explosive ordnance is any munitions, weapon delivery system, or ordnance item that contains explosives, propellants, and chemical agents. Unexploded ordnance consists of these same items after they have been: (1) armed or otherwise prepared for action, (2) launched, placed, fired, or released in a way that they cause hazards, and/or (3) remain unexploded either through malfunction or design. An individual's ability to recognize a UXO is the first and most important step in reducing risks associated with UXO hazards.

This article provides information about the most common types of UXO and how they may be found or appear in a field environment. Munitions come in all shapes, sizes, and colors. They are color-coded during the manufacturing process for easy identification purposes; however, color markings alone cannot be relied upon to identify UXOs. These markings can be altered or removed by exposure to the elements. Instead, physical features should be used to identify UXO outside its normal environment. Listed below are just a few items that may be encountered in a battlefield or training environment:

**Hand grenades.** Hand grenades are small explosive- or chemical-filled munitions designed for throwing at short range. Grenades that may be encountered as UXO include fragmentation, smoke, and illumination grenades. All grenades have three main parts: a body, a fuze with pull ring, and safety clip assembly.

Fragmentation grenades are the most common type of grenade used. They have a metal or plastic body filled with an explosive material. Most use a burning delay fuze that functions 3 to 5 seconds after the safety lever is released, but some activate instantly when the lever is released (smoke grenades).

**Rockets.** A rocket uses gas pressure from rapidly burning propellant to transport its warhead to a desired location. Rockets can range from 1½ inch to more than 15 inches in diameter, and they can vary from 1 foot to over 9 feet in length.

All rockets consist of a warhead section, a motor section, and a fuze. The warhead section of the rocket is the portion that produces the intended effect; it can be filled with explosives, toxic chemicals, white phosphorus, submunitions, riot-control agent, or illumination flares.

Fuzes may be located in the nose of the rocket or internally between the warhead and motor. Fuzing on rockets can be impact, time-delay, or proximity fuzing. Impact fuzes function when they hit the target. Delay fuzes contain an element that delays the explosion for a fixed time after impact. Proximity fuzes are intended to function when the rocket reaches a predetermined distance from the target. Do not approach! The proximity fuzing may activate, causing the rocket warhead to explode. Fired rockets may still contain residual propellant that could ignite and burn violently.

**Projectiles.** Projectiles can range from approximately 1 to 16 inches in diameter and from 2 inches to 4 feet in length. Projectile fuzes can be located in the nose or in the base. Like rockets, projectiles may be stabilized during flight by fins or bands fixed around the circumference of the projectile.

**Mortars.** Mortars range from approximately 1 to 11 inches in diameter and can be filled with explosives, toxic chemicals, white phosphorus, or illumination flares. Mortars generally have a

**An individual's ability to recognize a UXO is the first and most important step in reducing risks associated with UXO hazards.**

# Recognition 101

thinner metal casing than projectiles, but use the same types of fuzing and stabilization.

**Projected grenades.** The most commonly used projected grenade is the 40mm grenade. This grenade is also among the most commonly found UXO items. The 40mm grenade is about the same size and shape as a chicken egg. It contains high explosives and uses a variety of fuzes, including some of the most sensitive internal impact fuzing systems. Because of their relatively small size, 40mm grenades are easily concealed by vegetation. They are extremely dangerous and can explode if moved or handled.

**Submunitions.** Submunitions include bomblets, grenades, and mines filled with explosives or chemical agents. They may be antipersonnel, antimateriel, antitank, dual-purpose, incendiary, or chemical. Submunitions are typically spread over a large area by dispensers, missiles, rockets, or projectiles. These delivery systems disperse the submunitions while still in flight, scattering the submunitions over a wide area. Submunitions are activated in a variety of ways, depending on their intended use. Some are activated by pressure, impact, movement, or disturbance. Others are activated in flight or when they come near metallic objects. Some submunitions contain a self-destruct fuze as a backup. The self-destruct time can vary from a couple of hours to several days.

Submunitions are extremely hazardous, because even very slight disturbances can cause them to explode. Some types of submunitions require stabilization to hit the target straight on. Stabilization can be provided through an arming ribbon, parachute, or fin assembly.

**Bombs.** Bombs range in weight from 1 to over 3,000 pounds and in length from 3 to 10 feet. Generally, all bombs have the same components—a metal container, a fuze, and a stabilizing device. The metal container, or bomb body, holds the explosive or chemical filler and may consist of one or multiple pieces. Bombs use either mechanical or electrical fuzes, typically located in the nose or tail section, either internally or externally. Mechanical fuzes are

generally armed by some type of arming vane. The arming vane operates like a propeller to line up all the fuze parts and thus arm the fuze. The fuzes may be configured as impact, proximity, or delay fuzes. Bombs are stabilized during flight by fin or parachute assemblies attached to the rear section of the bomb, which often detach after impact.

Whether present in an area by design or by accident, UXO poses the risk of injury or death to anyone in the vicinity. To lessen the danger of UXO hazards and prevent placing others at future risk, certain precautions and steps should be taken by anyone who encounters UXO.

## **IF YOU DIDN'T DROP IT, DON'T PICK IT UP!**

The danger of UXO hazards can be lessened by being able to recognize the hazard and by adhering to the following basic safety guidelines:

- Once you visually identify a UXO, do not move any closer to it. Do not attempt to remove any object on, attached to, or near a UXO. Some types of ordnance have magnetic or motion-sensitive proximity fuzing that may detonate when sensing a target. Others may have self-destruct timers built in. Leave the hazard area and report the UXO.

- Do not transmit any radio frequencies near a suspected UXO hazard. Signals transmitted from items such as walkie-talkies, short-wave radios, citizens' band (CB) radios, or other communications and navigation devices may detonate the UXO.

- Whenever possible, mark the UXO hazard(s) with suitable materials, such as engineer tape, colored cloth, or colored ribbon. Attach the marker to an object so that it is about 3 feet off the ground and visible from all approaches. Place the marker no closer than the point where you first recognized the UXO hazard.

- Stay away from areas known or suspected of UXO contamination. This is the best way to prevent accidental injury or death. 

*Remember, ordnance is intended to kill...by design.*

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**A**ll right, it's time to have a talk about grenade and artillery simulators. We have too many people getting hurt with these things. When they are properly used, they make a great addition to training, but it's important to remember they are not toys.

### **Don't tamper with simulator devices**

The most frequently occurring accident trend is soldiers attempting to cut simulators open and light the powder with a match or lighter. Guys, this is not gunpowder! The photoflash powder in these simulators burns much faster than gunpowder and generates extremely high temperatures. Igniting flash powder with a match would be similar to mistaking detonation cord for time fuze. Bad news! Even Jackie Chan wouldn't be able to get away with it, what chance do you have?

### **Leave duds alone**

Just because the simulator didn't work when you wanted it to, doesn't mean that it won't work when you don't want it to. Mark it and report it. This applies to all unexploded ordinance. The EOD guys don't get all that extra money just for wearing sunglasses and looking cool, they get the extra money because they know what they are doing and because it's DANGEROUS!

### **Wear the appropriate safety equipment**

I know soldiers don't want to put on leather gloves and eye protection just to detonate a simulator. I also know that faulty simulators and premature detonations are relatively rare events, and the odds of your encountering one are fairly unlikely. Quality control has come a long way. But, let me put it into perspective... What are your odds of winning the lottery?

**DO THE RIGHT THING**

You play the lottery anyway, don't you?  
Bottom line—wear the safety equipment!

### **Read the instructions**

Everything in the Army inventory comes with instructions...read them. They are provided as a result of past pain and in an effort to prevent future pain. I like to think that I don't need instructions to keep me from applying my plastic 1-quart canteen to "open heat or flame," but obviously someone did, or the warning wouldn't be on there. Just bear in mind that instructions are there to keep you safe.

### **Injury doesn't recognize rank**

In years gone by, simulators were hurting a lot of the junior enlisted soldiers. So the smart people decided that only NCOs could use simulators. On some installations, soldiers must be in the pay grade of E-8 or above. As a result, soldiers stopped getting hurt for a little while. Now the problem is NCOs are getting hurt. Shrapnel doesn't stop for stripes. Just because you have rank doesn't mean you no longer have to be careful. The first guy I saw get hurt with a simulator was a Sergeant First Class, the last guy was a Master Sergeant. Both of them Infantry, both of them with years of experience and combat tours to their credit. Never assume just because soldiers have been in the Army a long time, they have experience with and know how to use all pyrotechnic devices.

### **Careful when you throw**

In theory, there is a reason why we wear camouflage. It makes us harder to see. You must be sure that your detonation area is clear. You don't want to co-locate a simulator with your soldiers, as this tends to severely impact both their health and morale. By the same token, detonating a simulator in dry grass or brush will start a fire; you may find yourself ENDEXing in order to play Fire Marshal Bill (ask me how I know!). In fact, I may have a better idea, take a look at the next paragraph.

### **Blast pits**

If time and situation allows, construct a blast pit for simulators. (This is mandatory at some installations, so check your local regulations.) Defined in simple terms, it is nothing more than a pit constructed to deflect the blast and debris away from you and yours. Getting hit with a twig doesn't sound like much, until it impacts your eyeball at the speed of sound. Important safety note: No more than one simulator at a time in the blast pit. Do the math on this, the first simulator you put in the pit is also going to be the first to detonate. Any additional simulators in the same pit may be ejected, thereby achieving an airburst on your own position.

### **Think safe**

Here are some basic rules that might help:

- If you have to wonder whether you are doing the right thing, you probably aren't.
- If you have to wonder if your commander will approve, he probably won't.
- Don't do dumb stuff.

### **Help is available**

To order your free pyrotechnic safety movie, go to our website, <http://safety.army.mil>, and click on **Media>Videos>Ground**.

**Pyrotechnic Simulators - Beware (TVT 20-925, PIN 707508)**

Click the "order now" Icon and follow the instructions. 

**POC: MSG Sean O'Brian, Risk Management Integration Division, DSN 558-2845 (334-255-2845), [sean.obrian@safetycenter.army.mil](mailto:sean.obrian@safetycenter.army.mil)**

**Everything  
in the Army  
inventory  
comes with  
instructions...  
read them.**

**R**ecently, the Army experienced a tragic accident involving the M121, 120mm mortar system. While conducting live-fire gunnery, the crew of the M1064A3 mortar carrier experienced a misfire, and during the process of extracting the round, an in-bore detonation occurred. Three soldiers died and one soldier received minor injuries. While there are numerous factors involved in this accident, the following information requires immediate attention.

The misfire procedures for the 120mm mortar system differ between TM 9-1015-250-10 and FM 23-90 (Mortar). Crews must use the procedures as outlined in Safety of Use Message (SOUM) TACOM Control number, SOUM-02-004. The initial safety investigation revealed that critical steps of the misfire procedures were not followed or enforced; such as ensuring the weapon is fully locked in the SAFE position, giving special attention to ensure the Blast Attenuator

Device (BAD) is removed, and the artillery cleaning staff used for extracting the round is fully extended and locked. Leaders must ensure that crews follow the exact sequence of these procedures; any deviation from the required steps can result in loss of life.

The safety mechanism on the M121 and M120, 120mm mortar is unlike other safety switches in the Army. With the safety switches on these weapons, the selector lever is moved *away* from the desired function (letter F for Fire, or letter S for safe). Because of this, the switch will reveal S if the weapon is on Safe, or F if set to Fire, and will fully cover up the function *not* desired. During the investigation, it was also revealed that the firing pin can still be exposed above the cannon base if the switch is in any other position except the fully locked Safe position. Because of this, the weapon must be considered armed even when the switch is not fully locked in the fire position. Crews *must* ensure the switch

is **FULLY** locked into either the Fire or Safe position depending on the mode of operations.

Additional factors revealed that crew drills using the 120mm mortar inert training round, (nomenclature “Battalion Training Aid”, NSN 6920-01-383-2939, found in appendix C of TM 9-10150250-10, additional authorization list) is required for misfire procedures training. Soldiers must conduct this training using the inert round in order for them to fully master the task of extracting a round. Simulation or talking through the sequence of misfire procedures is not adequate.

Leaders must ensure crewmembers are cross-trained and can demonstrate through practical exercise each step required during the misfire procedure. Then, leaders at all levels must enforce those standards and not allow either shortcuts or deviation from procedural sequencing. 

—BG James E. Simmons,  
Director of Army Safety

**091606Z May 02**  
**FROM: CDR OSC ROCK ISL IL //AMSOS-PBS//**

Subject: Ammunition Information Notice (AIN)  
40-02: Retransmittal of GPM-01-009, R131937Z  
Mar 01, M134, 7.62mm Machine Gun, NSN 1005-00-903-0751, LIN L92323

An increase in M134 gun stoppages and

jams occurs when firing Department of Defense Ammunition Codes (DODAC) A163/A164/A165/A168, 7.62mm ammunition linked with the M13 link that has an optional 0.165-inch hole in the connecting loop.

Although the M13 link with the optional hole can cause an increase in M134 gun stoppages and jams, the operational effectiveness of the M134 gun remains high when using A163/A164/A165/

**“ATTENTION”**

This message contains information that is vital to the safety of Army personnel and the operation or maintenance of Army equipment. This AIN should be disseminated to all personnel involved in inspecting, storing, handling, issuing, or using ammunition used in the M134, 7.62mm machine gun.

Recently, the Army lost two soldiers and injured 13 others in a tragic 105mm artillery accident. While conducting a calibration mission, the artillery unit did not follow established firing procedures when conducting live fire. As a result, a round impacted 930 meters short of its intended target. While there are numerous factors involved in this accident, the following information requires immediate attention.

Reference MILPER message 01-163, the MOS conversion of 13C and 13E into 13D is based upon the final fielding of the Advanced Field Artillery Tactical Data System (AFATDS). Commanders must be aware that 13D MOS training has not yet been incorporated into the schoolhouse POI. Currently, AFATDS New Equipment Training (NET) and unit level manual gunnery training is the only training available for this conversion process from 13C/E to 13D. Commanders must be aware that while

manual gunnery training and AFATDS NET can teach a 13C the mechanics behind manual gunnery, it may be inadequate to qualify a 13C to fulfill traditional 13E FDC NCOIC responsibilities at battery level. Commanders should carefully consider the level of training and qualification of 13C personnel recently reclassified to 13D, before certification and qualification in a battery-level Fire Direction Center.

Concurrently with the MOS reclassification, selected artillery units are undergoing fielding of the AFATDS, version 99.Oscar. A limited safety release message on AFATDS states that units must adhere to all standard policies and procedures for live-fire, to include verifying all data put into AFATDS via another approved method (Battery Computer System and/or manual computations). Commanders must be aware that AFATDS V99.Oscar has a built-in default of zero altitude if target altitude is not entered. A CECOM Safety Alert, and Amendment 1 to

Safety Confirmation for the non-First Digitized Division (non-FDD) Advanced Field Artillery Tactical Data System 99 (AFATDS 99), published by the U.S. Army Developmental Test Command (DTC), dated 10 April 2002, provides a warning to operators of this software behavior shortfall. Until this is corrected in AFATDS (V99.T and subsequent), Commanders must ensure that ballistic solutions obtained via AFATDS are appropriately verified by other approved methods.

Commanders must thoroughly assess all missions and use all information available to them as part of their risk management process. Ensure all assigned soldiers are trained, certified and supervised to standard both individually and collectively. There is no substitute for proper leader supervision, continuous and ongoing risk management, and on-the-spot corrections. 

—BG James E. Simmons,  
Director of Army Safety

A168, 7.62mm ammunition without the optional hole in the M13 link.

All M134 users are advised to limit the use of A163/A164/A165/A168, 7.62mm ammunition linked with the M13 link with the optional hole to training purposes only. (Note: this message does not apply to the M60 and M240 machine gun.) A163/A164/A165/A168 ammunition linked with M13 link with the optional hole should not be fired in the M134 gun in combat. When using the M13 link with the optional hole during training, units are advised to have the necessary logistics in place in preparation for additional M134 gun stoppages and jams.

Supply status: Inspect all A163/A164/A165/A168 ammunition lots in basic loads/ammunition supply points and identify lots "For Training Only" which have the M13 links with the optional hole. An investigation into this problem will be conducted to determine if an alternate resolution is feasible. 

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# Carry the Torch

A soldier was involved in a fatal mishap while his company was conducting a mission in support of Operation Enduring Freedom. The mishap occurred while the soldier was preparing a heavy piece of leftover Soviet-era equipment for removal from a building in order to make more usable space.

## What happened?

While using oxygen-acetylene torch-cutting equipment during partial renovation of a building, a soldier was kneeling at the base of an old hydraulic metal press weighing approximately 2000 pounds. The press was connected by four load-bearing steel plates attached to a steel beam platform on a concrete foundation. The soldier used the torch to cut along the inside edge of one of two load-bearing steel plates, then he cut the inside edge of the second load-bearing steel plate located on the same side of the press. When he completed the cut on the second steel plate, the hydraulic metal press abruptly shifted and fell over, striking the soldier in the back, and pinning him to the concrete foundation. It took 15 soldiers to remove the press from the soldier.

Prior to the accident, the First Sergeant instructed the soldier to remove the four bolts from the base of the hydraulic metal press, and further instructed two soldiers to assist. The first-line supervisor observed the soldier having difficulty removing one of the four bolts and instructed him to remove the bolt with the cutting torch. The soldier indicated that the oxygen-acetylene torch was not working properly and needed adjusting. The first-line supervisor adjusted the valves on the oxygen-acetylene torch, cut a small piece of metal to test the equipment, and left the soldier to continue his task.

The two other soldiers arrived to help remove the four bolts. They removed three of the four bolts with a wrench and the soldier originally assigned to the task cut the remaining bolt with the torch. The two soldiers then left the area to resume other tasks.

After a period of time, another soldier entered the room where the soldier was working on the press and observed him kneeling down next to the hydraulic metal press using the cutting torch on the load-bearing steel plates. Neither of the soldiers realized the hazard involved with cutting the steel plates at the base of the press. A short time later, the soldier that entered the room observed the hydraulic metal press abruptly shift, fall over, strike the other soldier on the back, and pin him to the concrete foundation.

## Why did it happen?

As with the case of many fatal accidents, a number of contributing factors caused this accident. Why did the soldier unnecessarily cut along the inside edge of two load-bearing steel plates on the same side of the press after being instructed to remove the four bolts? These plates secured the press to the support structure, and caused the now unsupported machine to fall from the support structure to the ground in his direction. The soldier was fatally injured; therefore it is difficult to determine the specific cause for his actions. He was no doubt trying to do the right thing. However, he didn't adequately pay attention to the instructions provided to him by the First Sergeant and first-line supervisor.

The company leadership was significantly involved in mission accomplishment as opposed to specific task accomplishment. Their main concern was clearing out the building to make more room, and the First Sergeant would

**"Piece of equipment that struck a soldier while he was using a cutting torch."**

occasionally check on progress. The First Sergeant's actions were the result of haste to complete the mission and overconfidence in the ability of the soldier to completely understand the entire task. The First Sergeant did not provide adequate instructions for the entire task that included removing the bolts, necessary precautions related to the hydraulic metal press, and the process for extraction of the press from the room. Also, the first-line supervisor had decreased his level of supervision of the soldier over time during this mission and was now periodically checking the soldier's progress on assigned tasks. This was the first of this type of mission for this unit, and no written standards existed for this type of task. Therefore, these circumstances required the leadership to apply more direct supervision.

The battalion failed to adequately conduct formal risk management during mission analysis. They failed to adequately recognize hazards associated with removing equipment from the building to make usable space. Further, formal risk management was not adequately conducted at company level. Additionally, the battalion and company failed to continuously assess the hazards and implement the necessary control measures in order to mitigate the risks associated with this mission.

Although the configuration of the welding equipment did not contribute to this accident, it was a significant hazard. The standard welding equipment authorized in this unit is the Torch Outfit, Cutting and Welding. However, the unit

used a combination of standard and nonstandard equipment. The oxygen regulation valve was adapted to fit a nonstandard oxygen tank. Also, the valve regulating gauges to both the oxygen and acetylene tanks were inoperative. So, what is the hazard associated with this? The hazard associated with inoperative gauges and adaptation of gauges to nonstandard tanks consists of inaccurate pressure determination and a possibility of an extremely violent explosion.

**Countermeasures**

- **Soldiers:** Pay attention to instructions, particularly when performing tasks that are not routine.
- **Leaders:** Don't let haste to complete the mission and overconfidence in subordinates lead you down the path to an accident and fatality.
  - Apply more direct supervision and adequate instructions as control measures during a "first of a type" mission.
  - Integrate risk management into mission planning, preparation and execution, and continuously assess the hazards during the mission.
  - Ensure that the decision to use nonstandard equipment is made at the appropriate level in the chain of command with control measures in place to mitigate risks. 🚒

**POC: Ground Systems and Accident Investigation Division, DSN 558-3562 (334-255-3562)**



wish each of you could have been with me earlier this month when I spent a week visiting our great soldiers serving in Afghanistan and other corners of that area of operation. All of us should be proud of them and the work they're doing in support of America's war on terrorism.

No matter if they were pulling force protection duties in Qatar, providing logistics support out of Oman, or fresh from the fight we're calling Operation Anaconda, all of these soldiers were pumped up about what they were doing for their country.

I told them their country and their fellow soldiers were proud of them. I ask each of you to keep them in your prayers as often as possible.

## Sergeant Major of the Army

### NCO business

From talking to sergeants who were on the ground in the Afghanistan highlands during Anaconda, I came away again impressed with the importance of the basic fundamentals of soldiering. Their time on the rifle range paid off, as their basic marksmanship skills and the M-4 rifles allowed them to consistently hit targets more than 400 yards away.

Their physical and mental stamina also served them well in the steep, barren terrain where the air was thin. One movement by soldiers of the 187th Infantry Regiment was expected to take as long as two days, but these Rakkasans soldiers did it in about eight hours.

Equally impressive to me was the fact that there were minimal cold weather injuries reported during Anaconda, despite temperatures that plunged as soon as the sun went down and the minimal amount of cold weather gear carried by the soldiers.

All of these things—physical conditioning, marksmanship, and cold weather injury prevention—are NCO business; if Operation Anaconda is any indicator, our sergeants know their business quite well.

I was especially proud of the performance of our younger soldiers for another reason. Some have been quick to criticize the soldiers who have joined the Army in recent years, saying they somehow don't measure up to their predecessors. I wish anyone believing that could have been with me on that trip, both to hear stories of their performance and see the fire in their eyes. Today's soldiers are as good as any that have ever worn our Army's uniforms. Period!

Other leaders and I recognize that our troops in

Afghanistan aren't the only ones working hard these days. Many soldiers are putting in incredible hours at their home stations on force protection duties and supporting the war on terrorism. Additionally, thousands of our troops are deployed far from home in places other than Afghanistan and the Philippines. Their contributions are vital to our country's interest, and I hope leaders at all levels are expressing that to them as often as possible.

### Army Transformation

I also spent time this month at Fort Lewis staying abreast of the Army's Transformation. I bought into this process a long time ago; but the more I learn

about it, the more convinced I am that it's absolutely the right thing for our Army.

If our interim brigades were online, they would be carrying much of the frontline load in Afghanistan right now. Once they are ready, they will play a critical role both in future missions and in developing the objective force.

### Exceptional Family Member Program

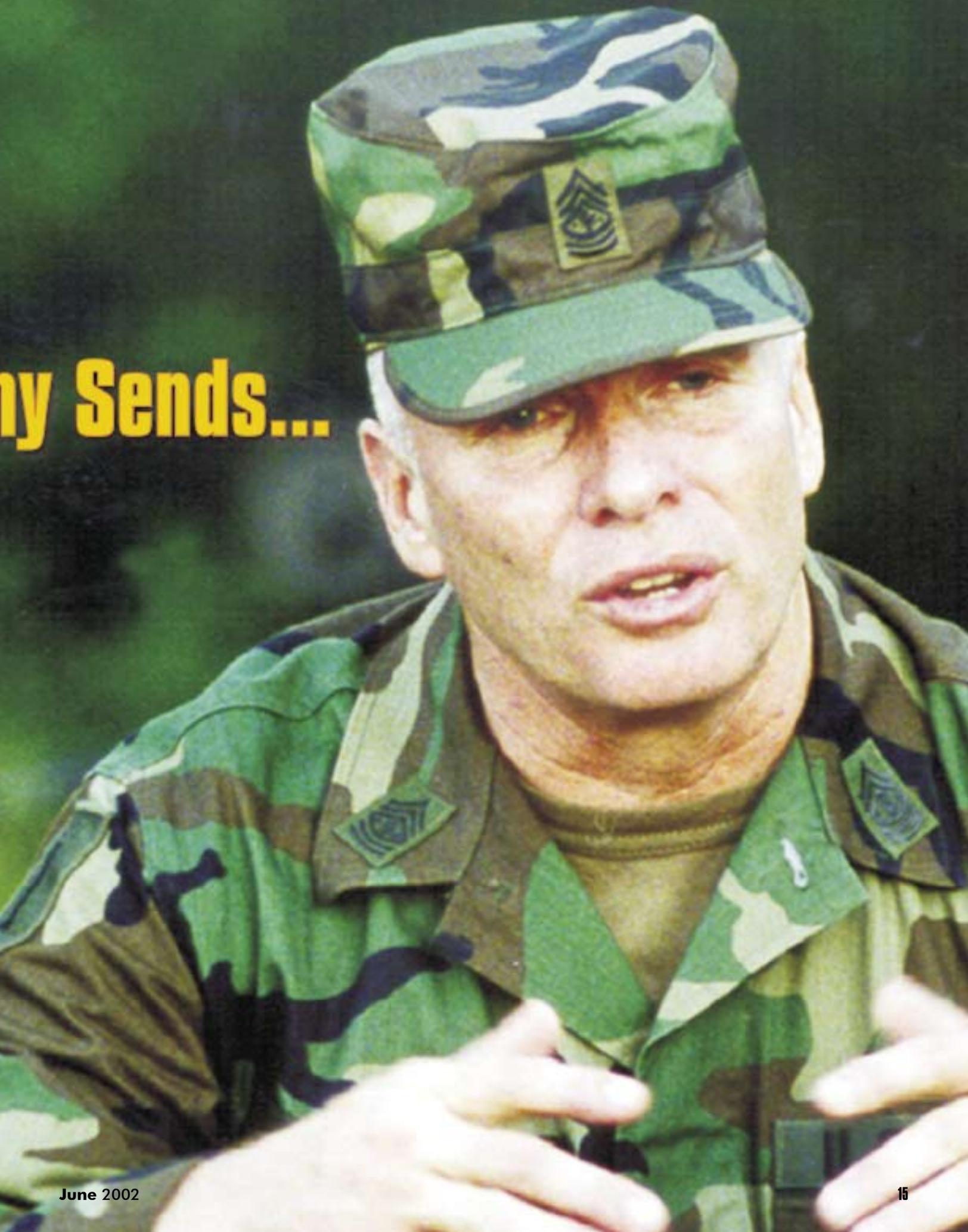
No doubt because my own family has been enrolled in the program for years, I try to stay involved with the military's Exceptional Family Member Program (EFMP). Based on personal experience, I can tell you that it means a lot to the parents of a special needs family member when the chain of command understands EFMP and takes time to occasionally ask about EFMP families in their units. That little bit of knowledge and concern can go a long way toward helping EFMP families feel like they are truly understood and cared for. I ask leaders—especially at battalion level and below—to reach out to these families, get to know them, and learn what the program offers in their respective area.

### Army Soldier and NCO of the Year

I'm getting excited about the rapidly approaching Army Soldier and NCO of the Year competition, which will bring our MACOM's finest to Washington, DC, for the final competition.

This is the first time in institutional memory this has been done, and I ask for your assistance in looking for ways to publicize this event. You can help by ensuring your unit and installation soldiers and NCOs of the year receive publicity in your command's

ny Sends...



newspapers, web sites, and other internal media outlets. Also, if your unit's best are among the MACOM finalists coming here, ensure your public affairs offices are publicizing that story as well, both on and off the installations.

This is a good news story for all of us, and the personal involvement and availability of senior NCOs in publicizing this new program will only serve to increase the honor going to the individuals who win, as well as their MACOMs, posts and units.

### Basic courtesy

It could be that I'm old-fashioned, but for years much of my initial impression of a person or an organization has been based on how polite and courteous they are. Some might call this military courtesy; but to me, it's basic courtesy and doesn't necessarily have a lot to do with a person's place of employment or job title.

Little things like simply saying "hello" to another person crossing a parking lot, standing up when you're doing business with your co-workers, and maintaining a positive, professional outlook have always been important to me. And, more importantly, I believe these acts of good manners do something for morale and impact how an organization perceives itself.

### Leader involvement is key to reducing accidents

We've lost several soldiers this month in several accidents, and I hope these tragedies will motivate each of us to put safety at the forefront of every plan we make and all we do throughout the day. I remain convinced that leader attentiveness and involvement are the keys to reducing accidents.

Complacency can cost an organization in areas beyond its safety statistics. The events of last year demonstrate that we have enemies who wish to destroy us. They watch us, probably more often than we want to believe, in hopes of discovering weaknesses that can be exploited. All of us—at all levels—must guard against complacency.

This is especially key as the war on terrorism

## Tell Us About Your NCOs

Most NCOs do good work. They train their soldiers well and keep them out of harm's way. NCO leadership is so important that when an NCO fails to lead safely, the results can be catastrophic...and the results often show up in *Countermeasure* as an accident report. What we'd really like to do is tell the stories of successful NCOs who train safely and take care of their troops. We'd like to share their secrets with the rest of The Army. But, to do that, we need your help.

Please send your stories or give us a call. We'll do the rest. You can reach us by e-mail [countermeasure@saftycenter.army.mil](mailto:countermeasure@saftycenter.army.mil) or call one of our NCOs at DSN 558-2959/2744/3774. 📞

begins to lengthen and deployed units begin a rotation schedule. Just as good soldiers work constantly to improve whatever fighting position they occupy, I hope leaders will constantly review and refine their force protection procedures. This could save more lives than we could possibly know.

### Housing allowance surveys

I noted recently that housing allowance surveys have been mailed to more than 17,000 overseas service members who don't live on military installations. The surveys collect information on costs associated with utilities, trash disposal, heating fuels, security fees, and a number of other routine maintenance costs. The results are then used to determine how much overseas housing allowances will be increased in the coming years.

Typically, less than half of the surveys are completed and returned, and that could cost some of our soldiers money. I ask

you to remind your formations that these surveys are on the way, encourage recipients to complete them, and remind them that they can be done via the Internet.

### Veterans

I'd like to leave you—as I often do—with a note about our great veterans. For those of you who haven't made it a point to get to know the veteran groups in your area, I suggest that you are missing out on opportunities that are both rewarding and motivational.

I recently accepted an invitation to travel and speak before a small American Legion Conference. Just having a senior, active-duty NCO talk about today's Army seemed to mean a lot to them. I'd like to remind you that our veterans are a group that we can never do enough for.

Again, I appreciate everything you're doing for our country, our Army, and our soldiers. God bless! 🙏

—Adapted from Sergeant Major of the Army's April Thoughts-n-Concerns

# Prepare, Be Aware, Be There

**W**hen the sun turns the heat up in late spring and summer, that soldier who just processed into your unit from Europe is going to have problems if you don't help him keep his cool. We NCOs need to inform soldiers of the great risks of heat injuries before the solar blast of summer hits.

"But Sarge, I'm used to the heat, I'm from Florida" doesn't mean much if the soldier has recently returned from an overseas assignment. As little as two weeks away from a warm climate is enough to cause the body to "forget" how to handle the heat. Soldiers must be acclimatized gradually.

One soldier went directly from an assignment in Alaska to an assignment at Fort Sill, OK. He became a heat casualty shortly after the move.

The typical heat casualty is a young male soldier in 11B or 12B MOS, who is engaged in MOPP training, patrolling, road marches, land navigation, physical training or unit runs, or is in a hot field environment.

Preventing heat injuries is clearly the business of leaders at all levels. Leader preparation, awareness, and presence are all critical to avoiding heat casualties.

## Prepare

First and foremost, leaders must set the conditions for success by ensuring their soldiers are provided adequate amounts of water, food, and rest.

Soldiers also need training on prevention of heat injuries, and they should receive refresher training before hot weather arrives.

Supervisors should be fully trained on the requirements of hydrating soldiers, but they also should know about the phenomenon of hyponatremia. This occurs when someone takes in too much water without maintaining enough salt in his body, ordinarily from not eating properly. While hydration is critical, it should never be forced to the point that it exceeds 1½ quarts per hour or 12 quarts per day.

Another key element of leaders' preparation is the physical conditioning of their units. Physically fit soldiers withstand the rigors of training in the heat better than those in a lower level of fitness. The "chairborne" soldier who goes to the field for two weeks can be in for trouble if he doesn't exercise caution.

## Aware

Next, leaders must be fully aware of the climatic conditions and the degree of acclimatization and prior heat problems of their soldiers.

To accurately gauge heat conditions, the Army uses the Wet Bulb Globe Temperature (WBGT) index system. This device—and its accompanying fluid replacement and work/rest charts—gives leaders clear guidance on how to measure the combined effects of heat, wind, and humidity, and then how to take appropriate steps to modify hydration and work cycles to prevent injuries. (See April 2002 *Countermeasure*.)

Leaders must also be aware of soldiers who have recently PCS'd to the command. Someone who has been assigned to a new base less than two or three weeks is far less likely to be able to handle the rigors of field training than an "old hand" in the unit. Leaders also must clearly identify those soldiers who have been heat casualties before, because they are more susceptible to a repeated heat injury.

Leaders should know which soldiers have recently been sick or on medication, because many medications can reduce the body's tolerance to heat.

Wise supervisors know they can't be everywhere at all times, so they must ensure their subordinates are using the buddy systems to monitor one another.

## Presence

Just as important as preparation and awareness is leader presence. Nothing takes the place of supervision on site at training. Leaders must be at training so they can gauge what the soldiers are experiencing. They also must be present to ensure that hydration breaks are taking place, rest breaks are given, and sensible modifications are made to work schedules.

The prevention of heat injuries is leader business. We, as leaders, are responsible for our soldiers. The time lost by soldiers suffering from heat injuries is a direct reflection on our leadership—we must prepare, be aware, and be present! 

POC: SFC Patricia Stoker, Aviation Maintenance NCO, Risk Management Integration Division, DSN 558-9854 (334-255-9854), [patricia.stoker@safetycenter.army.mil](mailto:patricia.stoker@safetycenter.army.mil)

Senior Army leadership and civilian employees at Fort Bragg, North Carolina and Watervliet Arsenal, New York have been participating in the Defense Employee Work Safety Demonstration Program (DEWSDP) since its introduction last November.

So, what is the DEWSDP? This pilot program has been mandated by Congress to introduce private industry's proven best safest work practices into DOD sites. The Army selected Fort Bragg and Watervliet Arsenal for participation in the pilot program which runs through September 2002. These two installations will evaluate whether these practices can improve DOD-wide civilian work force safety standards and reduce accident and injury rates and the resulting human and fiscal costs. Concurrent programs are being implemented by the other DOD services—Navy, Marines and Air Force. Results will be reported to Congress in December 2002.

This work safety program is different. Instead of traditional classroom-style training, its aim is to change—with your active involvement—the safety culture at your workplace and in the Army generally. Through the program, you will learn how to recognize unsafe behavior—your own and others'—and how to negotiate changing those behaviors. You'll also learn how to make identifying and reporting unsafe conditions part of the way you go about your daily business.

### **Safety is our workplace priority**

The Department of Defense and the U.S. Army are committed to workplace safety. Currently, civilian employee occupational injuries and illnesses cost the Army in the vicinity of \$169 million each year in direct costs (Federal Employee Compensation Act, 2001) and an Armywide daily average of 33 civilians injured on the job (OSHA, 2000). Department of Defense costs for workplace accidents and injuries are estimated at \$600 million per annum, based on FECA figures.

### **The Army program has three integrated components:**

■ **Safety training.** The DuPont Safety Resources-developed discovery-learning module is tailored to a range of onsite responsibilities that helps employees engage with safety issues in a solutions-focused manner. Developing observation and negotiation

skills is a key element of this training. Ongoing coaching is also offered.

■ **Data collection.** A sophisticated database, originally designed for Intel®, records safety observations and tracks accident and injury case management with customized real-time data and analysis. The system—known as the Environmental Health and Safety Data Management System—also tracks employee observations and perceptions as a means of involving the total workforce in maintaining and developing safe practices. Server space for this web-based system is being provided by the U.S. Army Center for Health Promotion & Preventive Medicine.

■ **Communications.** With the help of a range of onsite news media, management, and employees at participating installations, information is being disseminated throughout the command structure about progress of the pilot program. Information regarding the DEWSDP is now available through Army publications, television news services, and websites.

Army implementation of the DEWSDP is being managed by James Gibson, Office of the Director of Army Safety, and COL Mary Lopez, U.S. Army Center for Health Promotion & Preventive Medicine at Aberdeen Proving Grounds. DuPont Safety Resources (DSR), a division of the historic Delaware-based corporation DuPont, has been contracted to provide program implementation services to the Army. 

*“Developing safety in the workplace is about everyone changing their own habits, being observant and communicating the changes that need to happen; that is, taking ownership of safety.”*

—DuPont Safety Resources (DSR)

Contractors to Army implementation of the DEWSDP

POC: Ruth Riddick, Communications Program, Army Implementation Team, Defense Employee Work Safety Demonstration Program, (202) 365-3038, RiddickR@aol.com

## Power Lawn Mowers Recalled

The Army and Air Force Exchange Service (AAFES) has issued recalls for several models of Murray riding lawn mowers. The lawn mower recall is part of a voluntary recall between the U.S. Consumer Product Safety Commission and Murray Inc., of Brentwood, Tenn. The recall involves about 89,500 rear-engine riding lawn mowers and about 6,200 mid-engine riding mowers. It affects models manufactured in Lawrenceburg or Jackson, TN. AAFES sold only the Model 30560x99 rear-engine mowers. For more information on the lawn mowers, visit the Murray Website at <http://www.murray.com> or contact AAFES. 🐾

—Military Report, March 26, 2002 Issue

## GSA to Feds: Don't Talk and Drive

The General Services Administration (GSA) told federal agencies to urge their employees not to talk on hand-held wireless phones while driving vehicles owned or leased by the federal government.

While GSA did not ban talking on hand-held cell phones while driving altogether, it recommended that agencies discourage the use of cell phones by drivers of federal vehicles.

As one solution, GSA recommended that agencies provide a hands-free car kit with government owned wireless phones and educate employees on how to drive safely while using them.

"It is appropriate that the federal government assume a leadership role in promoting the safe use of wireless telephones by its employees when they are engaged in official government business," GSA said in a bulletin published in the *Federal Register*.

Legislation pending in 27 states would ban hand-held wireless phones while driving. New York state has already approved such a ban. In general, federal employees are not exempt from state and local laws dealing with motor vehicles, and agencies should be aware of the potential for increased liability from accidents caused by the use of wireless hand-held phones, GSA said.

The National Highway Traffic Safety Administration (NHTSA) has several studies underway of such driver distractions as cell phone use. GSA plans to keep agencies informed on the findings and any changes in federal policy on cell phone use, the bulletin said. 🐾

Courtesy of Katy Saldarini, [ksaldarini@govexec.com](mailto:ksaldarini@govexec.com), GovExec.com Federal Newsletter, March 5, 2002

## Farewell...

This issue is my last as editor of *Countermeasure*; however, I will not be going far. On 1 June, I will be transitioning over as the *Flightfax* editor, the Army Safety Center's aviation safety publication. So, if you have any aviation stories to tell, send them to [flightfax@safetycenter.army.mil](mailto:flightfax@safetycenter.army.mil) or call DSN 558-9855.

I came to the Safety Center in 1997 as editor of *Countermeasure*, which was a 12-page black-and-white newsletter. In August 2001, *Countermeasure* grew to a 20-page full-color magazine with a distribution of 30,000 copies.

I wish I could take complete credit for *Countermeasure's* birth and growth, but I can't. The people who have made this magazine a useful tool in their safety programs are its readers, contributing authors, and supporters. You are one of those people. Without your contributions, input, suggestions, and encouragement, this magazine wouldn't be published on the scale it is today.

Starting with the next issue, Melissa Bonds and Truman Taylor, Occupational Safety and Health Managers, will be the interim editors of *Countermeasure*. You can reach Melissa at DSN 558-2947 and Truman at DSN 558-2609 or e-mail [countermeasure@safetycenter.army.mil](mailto:countermeasure@safetycenter.army.mil). Give them a call or send them a note. They will be glad to hear from you. 🐾

**Mission First, Safety Always!**

*Paula Allman*

[Paula.allman@safetycenter.army.mil](mailto:Paula.allman@safetycenter.army.mil)

## Thanks...

I would like to say thanks to You, the readers, for your continued, unwavering support and dedication to safety. Although I'm leaving to attend the War College in July, it has been my distinct privilege to serve as the Publishing Supervisor of both *Countermeasure* and *Flightfax* magazines over the past 11 months. Throughout the period, it has remained our mission to provide you with quality, well-written, informative and relevant coverage of safety-related issues, TTPs, DOs & DON'Ts, and accident analysis with one end-state: Accident Prevention. I challenge each of you to continue your vigilance; you Can, Have, and Do make a difference every day. You cannot let your guard down...because the loss, injury, or damage to a single soldier or piece of equipment in a preventable accident could mean the difference between success and failure on the next battlefield. 🐾

LTC Scott G. Ciluffo, Deputy Director of Operations & Publishing Supervisor, DSN 558-2801 (334-255-2801), [scott.ciluffo@safetycenter.army.mil](mailto:scott.ciluffo@safetycenter.army.mil)



# RAY ATTENTION!

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