Countermeasure

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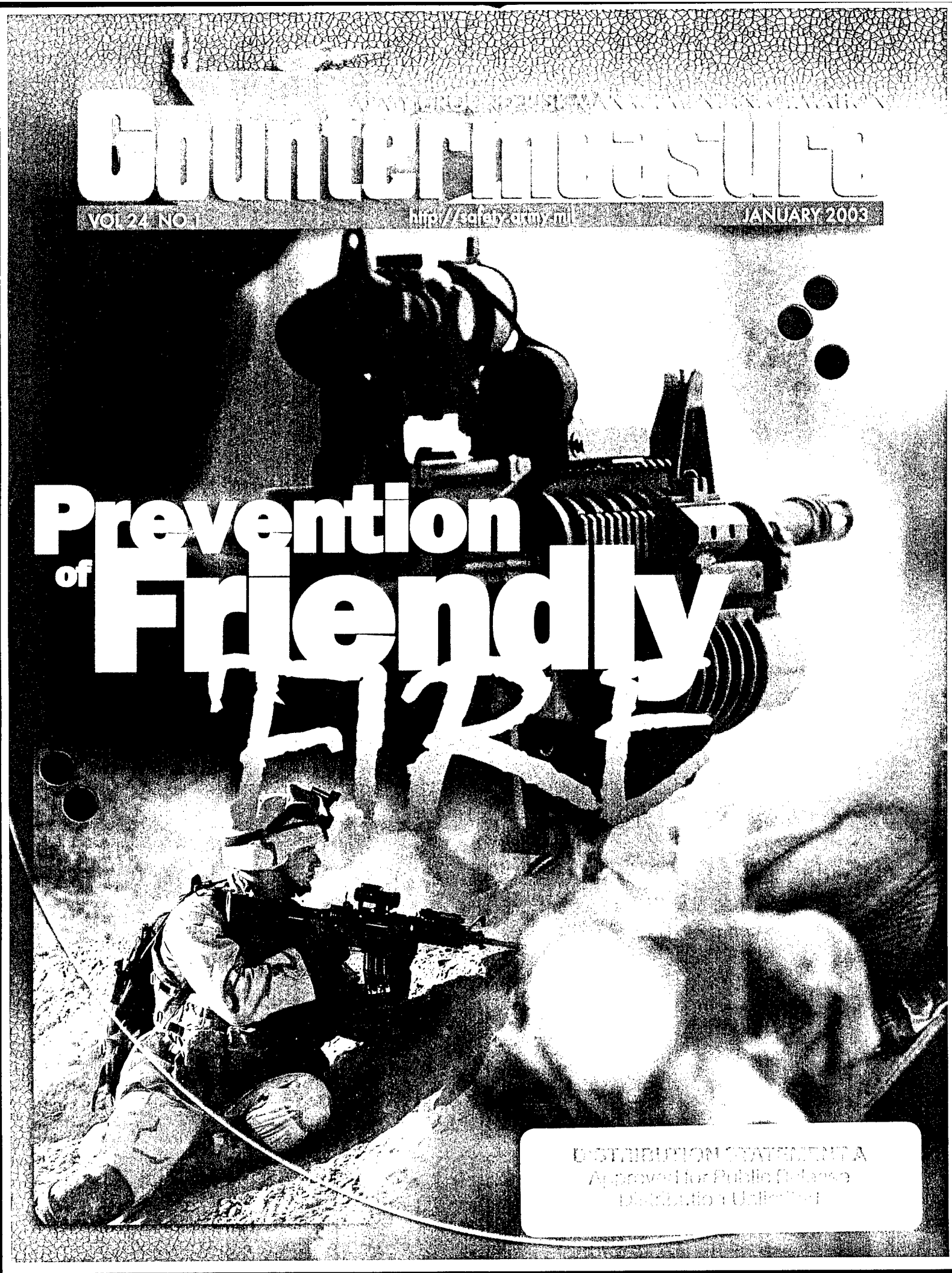

Prevention of Friendly Fire

Countermeasure

ARMY GROUND RISK-MANAGEMENT INFORMATION

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DASAF'S CORNER

From the Director of Army Safety

Managing Risks Prevents Fratricide

Each time we extend into conflict, the number of accidents goes up both in the areas of operation and in the training bases preparing to support the operation. Statistics show that we lose more soldiers to accidents than to enemy action during conflicts. In every major conflict since the Korean War, we have suffered more casualties due to accidents than to enemy action. In addition to accidents, friendly fire incidents have claimed a significant number of lives as well.

In combat operations and intensified training conditions that nearly replicate combat conditions with large numbers of armored combat vehicles operating in congested areas, convoy operations at night and often limited visibility, aviation operations, and huge numbers of personnel on the ground, the "fog of war" can result and the stage is set for friendly fire incidents. In Operation Desert Shield/Desert Storm, we experienced 12 direct-fire, 1 indirect-fire, and 2 air-to-ground fratricides, and 77 percent of our combat vehicle losses were due to fratricide. Combat identification was the number one problem.

Since Desert Shield/Desert Storm, fratricide prevention has been a point of discussion for soldiers attending leader courses. It is also a subject of great concern at our training centers. However, technological solutions for fratricide prevention have not advanced significantly in the years since Desert Shield/Desert Storm. In fact, other than schoolhouse training and development of situational awareness tools, we actually have made no measurable improvement in our ability to prevent fratricide since Desert Shield/Desert Storm.

Recognizing the need to address this potential hazard and proactively define controls to reduce its risk before we engage in future conflicts, the Chief of Staff, Army directed a fratricide avoidance risk assessment. Data and lessons learned collected from FORSCOM units and TRADOC institutions show that we remain at high risk for fratricide incidents.

Reducing that risk requires continued education and training. Soldiers must learn to maintain situational awareness. Vehicles and individuals must be marked appropriately, and soldiers must be sufficiently trained to identify those markings. Other mitigation efforts include fielding combat identification panels or thermal identification panels on all vehicles at brigade and below. Soldiers must also master the use of global positioning systems and land navigation. We also can reduce this risk by developing a standard method for employing attack aviation in the close fight, by certifying our battalion commanders on the effects of weapons systems and fire and control of direct and indirect fires.

The intent of conflict or war is to inflict harm on only those we intend to—the enemy—and not our own forces. The loss from accidents or fratricide of any of our assets greatly reduces our readiness. Bu when we lose soldiers due to friendly fire, this needless loss of combat power also results in a general degradation of cohesion and morale, which can cause us to lose the initiative and our aggressiveness during fire and maneuver operations. The impact can be so great that it leads to a hesitation to conduc limited visibility operations, loss of confidence in the unit's leadership, an increase in leader self-doubt, hesitation to use supporting combat systems, or even over-supervision of a unit.

As leaders charged with executing the many missions given to our Army while simultaneously protecting the men and women who so selflessly serve, it is incumbent upon us to address proactively common recurring hazards that accompany intensified training preparations and real-world missions. Fratricide is one hazard we must ensure our soldiers have been properly trained to prevent on the battlefield. ✪

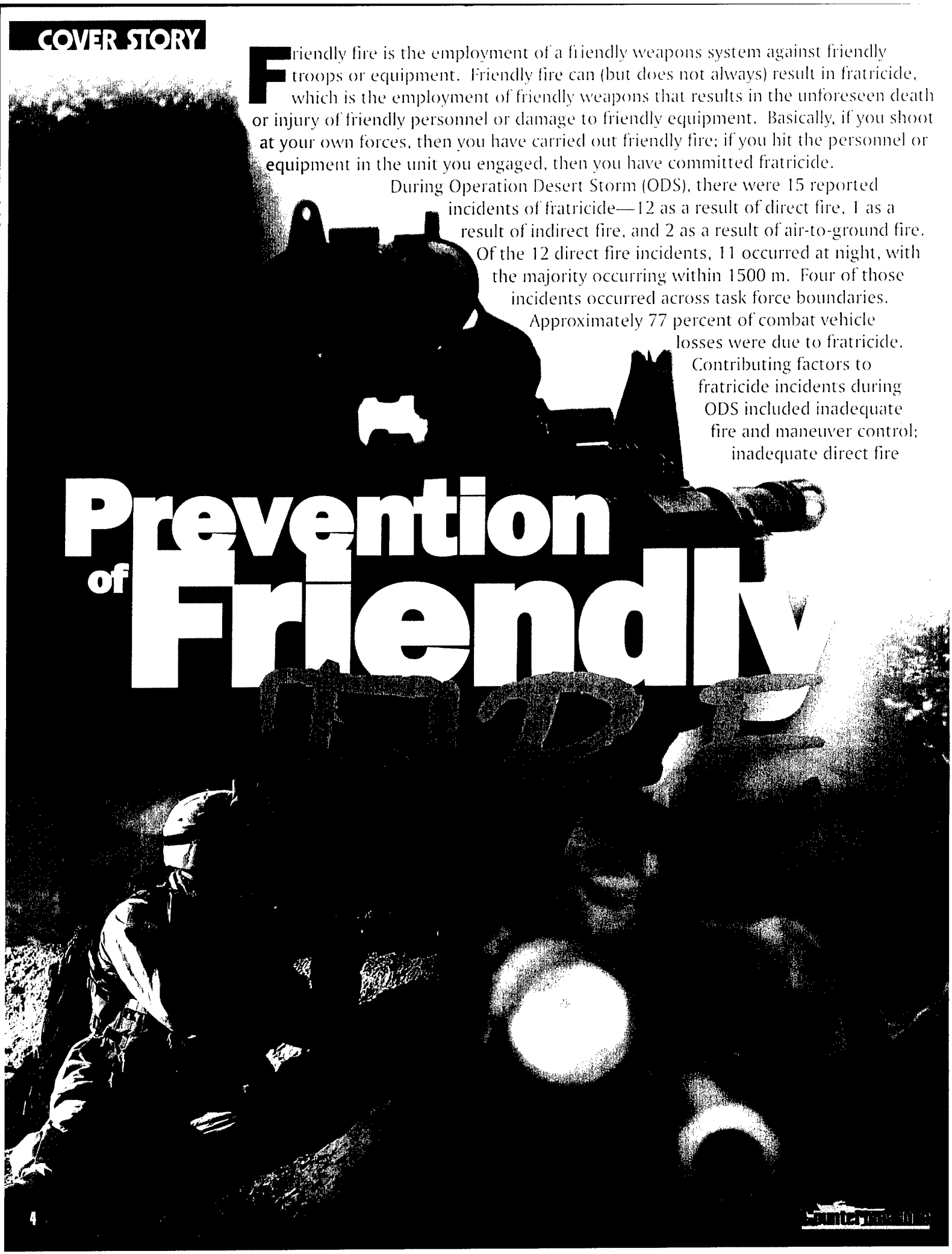
Train Hard, Be Safe!

BG James E. Simmons

Prevention of Friendly

Friendly fire is the employment of a friendly weapons system against friendly troops or equipment. Friendly fire can (but does not always) result in fratricide, which is the employment of friendly weapons that results in the unforeseen death or injury of friendly personnel or damage to friendly equipment. Basically, if you shoot at your own forces, then you have carried out friendly fire; if you hit the personnel or equipment in the unit you engaged, then you have committed fratricide.

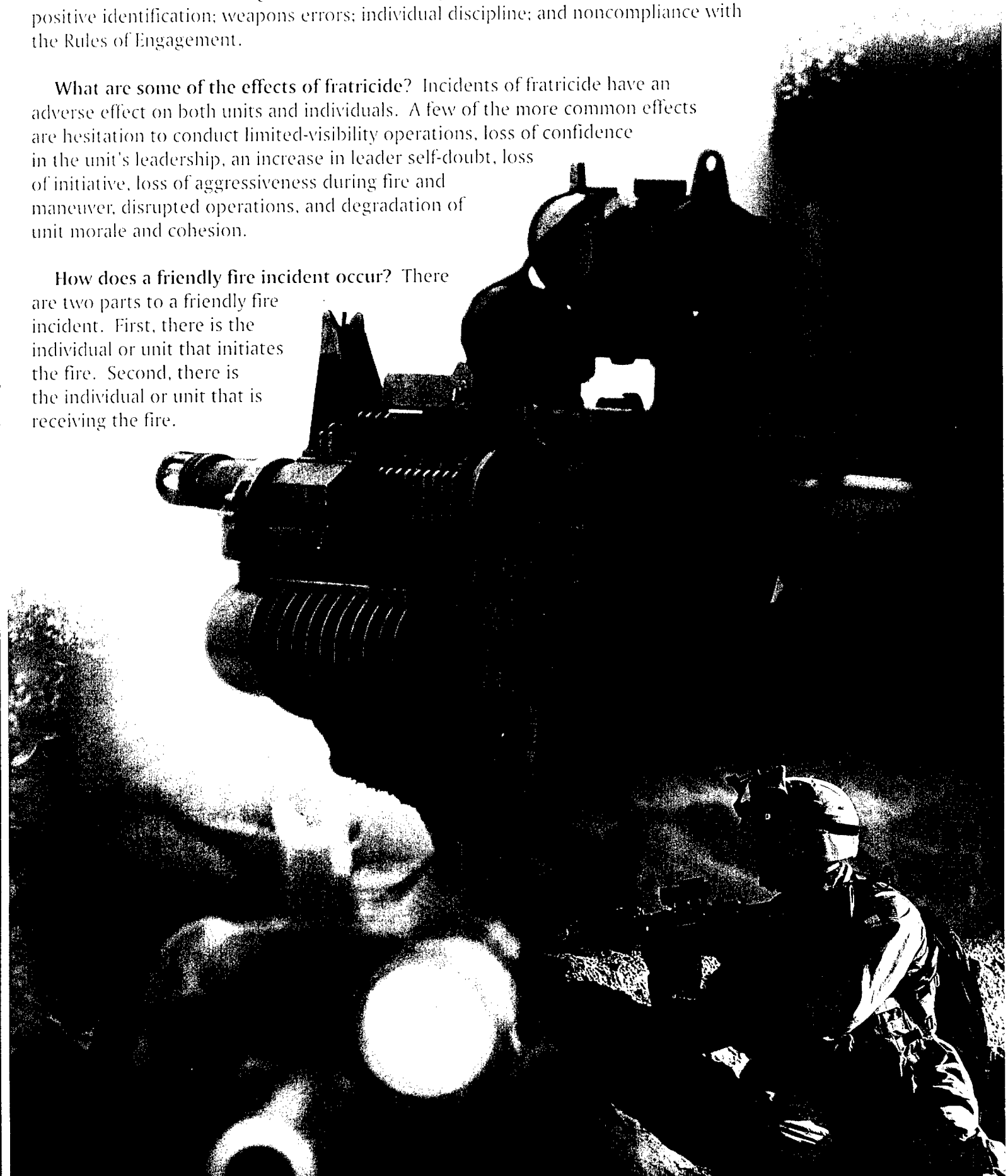
During Operation Desert Storm (ODS), there were 15 reported incidents of fratricide—12 as a result of direct fire, 1 as a result of indirect fire, and 2 as a result of air-to-ground fire. Of the 12 direct fire incidents, 11 occurred at night, with the majority occurring within 1500 m. Four of those incidents occurred across task force boundaries. Approximately 77 percent of combat vehicle losses were due to fratricide. Contributing factors to fratricide incidents during ODS included inadequate fire and maneuver control; inadequate direct fire



control measures; land navigation failures; inadequate reporting or cross-talk; lack of positive identification; weapons errors; individual discipline; and noncompliance with the Rules of Engagement.

What are some of the effects of fratricide? Incidents of fratricide have an adverse effect on both units and individuals. A few of the more common effects are hesitation to conduct limited-visibility operations, loss of confidence in the unit's leadership, an increase in leader self-doubt, loss of initiative, loss of aggressiveness during fire and maneuver, disrupted operations, and degradation of unit morale and cohesion.

How does a friendly fire incident occur? There are two parts to a friendly fire incident. First, there is the individual or unit that initiates the fire. Second, there is the individual or unit that is receiving the fire.



This occurs most often when one or more units have identified a friendly unit as an enemy or do not know the friendly troops are there due to a lack of situational awareness, and then engage them with direct or indirect fire.

How does one get into a position that they might receive friendly fire? There are several ways that an individual or unit can put themselves at risk of receiving friendly fire. The first is **loss of situational awareness.** This can be caused by a multitude of things, to include: inadequate control measures in place to keep direct fire oriented towards the enemy; inadequate control measures that prevent an attacking force from becoming disoriented; inaccurate reporting that does not keep higher units apprised of the tactical situation; and communication errors that can lead to erroneous clearance of fires, thereby allowing indirect fire to rain down on friendly forces. The second is **inadequate land navigation.** This can either be going outside assigned sectors, becoming disoriented and possibly traveling in the wrong direction, or even reporting an incorrect location to a higher element so no one outside your immediate element really knows exactly where you are. The third is **not marking vehicles and personnel** with some type of marking device that will aid in identifying them as friendly forces. These markings need to address day and night visibility and should be tailored to be identified easily by the platforms that are operating in the same sector. An example is that a thermal sight on a tank cannot see a chem light or GLINT tape. A marking system becomes even more critical in times of limited visibility or in a fire fight that puts friendly and enemy forces in close proximity.

How does one get into a position to commit an act of delivering friendly fire? These causes are much the same as the categories above. The first is the **loss of situational awareness**—not keeping the weapon system oriented in the right direction and deviating out of the engagement area, or failure to adhere to the control measures in place. Then you have **land navigation.** If an individual or unit does not know its location or the location of other friendly units, then it cannot be certain who is operating in their vicinity. The third is **failure by individuals to positively identify the target** as an enemy before initiating fires (direct or indirect). This is especially critical in times of limited visibility, whether that be darkness, fog, rain, or a sandstorm.

Now that we have defined friendly fire and discussed how it can happen, it is time to lay out a plan to **reduce the risk** of a friendly fire incident. The key is tough, realistic training with leaders actively involved in eliminating friendly fire incidents. This can be done by ensuring a number of things happen. Good units with good leadership make these things happen in every operation. They include (1) ensuring the unit has adequate control measures to conduct the operation and that these control measures are distributed down to the lowest level; (2) ensuring all soldiers understand the operation and schemes of maneuver by their unit and adjacent units; (3) rehearsing the plan to ensure that all soldiers understand the plan and the orientation of their unit during the plan; (4) using all position location and navigation devices available and understanding that if a unit gets disoriented or lost, they must contact higher headquarters immediately for instructions and assistance; (5) keeping soldiers informed and ensuring they understand clearly the friendly and enemy situations; (6) making positive identification before engaging targets; (7) marking unit vehicles and personnel so they can be identified by other friendly units operating in the same sector (i.e., combat identification panel system (CIPS), thermal identification panels (TIPs), GLINT tape, thermal tape, smoke, etc.); and (8) ensuring all soldiers and leaders understand the Rules of Engagement.

Doing all of these things will not eliminate the possibility of a friendly fire incident; however, it will reduce the risk significantly.

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One Moment Can Affect a Lifetime

As we begin a new year, it is only fitting that we pause for a moment to reflect on the 198 soldiers that were killed in accidents over the last 12 months. 198 of our people gone forever. Our soldiers are our most precious resource; we can and must do better. We can't afford not to.

We owe it to our soldiers and we owe it to the people of this great Nation that we are sworn to protect. Our citizens send us their sons and daughters in good faith, confident that we will train them and protect them to the best of our ability. How can we justify losing even one of our soldiers to a needless accident that could have been prevented? How can we explain that loss to a grieving parent, a young widow, or to a child that can't understand why their mother or father isn't coming home?

While it may seem strange, good intentions are a common factor in Army accidents. Accidents are not caused by evil people; they are caused by people just like us that are merely trying to accomplish their daily tasks, on and off duty. Frequently they are doing things that many of us also have done before—we were just lucky enough to get away with it. The fatigued soldier speeding to get home over a long weekend; the motivated troop trying to "make it happen" in the face of inadequate time, training, or information; the operator or mechanic taking the maintenance shortcut that "never caused a problem before." These are just some of the examples that have led to disaster for our soldiers. These were great people trying to do great things but failing to properly identify, assess, and control the hazards, whether through inattention, overconfidence, indiscipline, or a simple lack of knowledge.

One thing that always has distinguished our Army from that of other nations is our ability to take initiative and make things happen. In the absence of proper supervision and effective training, this positive trait can actually work against us in the accident prevention arena. Do not discourage initiative; it is a vital part of what gives us the ability to fight and win wars. Encourage initiative, but we must ensure that we have provided soldiers with the tools required to accomplish their tasks properly and safely.

Soldiers are adults with adult responsibilities and a serious mission. Let them stand on their own two feet, give them responsibility that is commensurate with their rank and maturity, but never relax your guard. That young soldier is squared away and has the best of intentions, but he or she does not have the experience you have. Increase their responsibilities as they grow, but continue to provide leadership and mentorship so they can rise to your level of expertise and continue the tradition by leading and mentoring their own soldiers. Gaining experience is a continual process. Some lessons come easy; others are painful. We learn and grow by trying new things and often by making mistakes. Let your soldiers learn from the mistakes you may have made and the lessons you have learned so they do not have to relearn the things that we already have discovered the hard way.

The profession of arms is inherently dangerous and will never be truly safe. We must continue to conduct hard, realistic training. The old adage still rings true: "Better to sweat in peace than bleed in war." We must effectively manage risks by ensuring that the benefits to be gained outweigh the risks, controls are in place to reduce or eliminate the risks, and that decisions are made at the appropriate level. Build positive habits on duty that your soldiers will transfer to off-duty activities. Never miss an opportunity to emphasize safety or make an on-the-spot correction. Supervise and enforce the standards in all tasks. Mission accomplishment and welfare of the troops are simultaneous tasks that are interdependent upon each other. One moment can affect a lifetime. Talk to your soldiers and make them believe it. You may just save a life.

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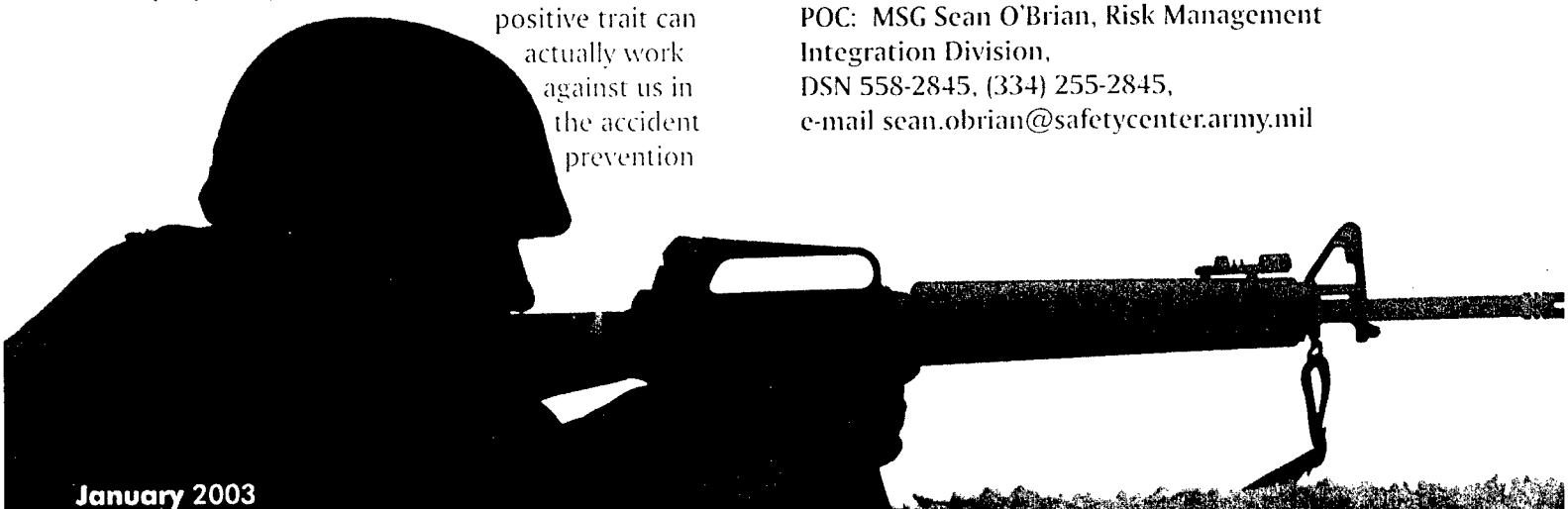

From the Front: EOD in Afghanistan

Operation Enduring Freedom (OEF) poses many unique challenges to the explosive ordnance disposal (EOD) soldier. After centuries of war, including a decades-long conflict with the former Soviet Union, Afghanistan is grossly contaminated with unexploded ordnance (UXO) and uncharted minefields. Some estimates place the total number of mines and UXO as high as 10 million. And, the problem is as complex as it is vast. Countless unexploded munitions lay strewn across a lunar-like landscape randomly seeded with mines of every type and origin. Yet, efforts to remove these hazards are frequently met with resistance from the indigenous populace who view UXO as a potential resource.

From the onset of OEF, the first priority facing EOD soldiers was clearing UXO from the airfields at Kandahar and Bagram so airflow could begin. In the early stages of OEF virtually everything moved by air, making restoration of the airfields a mission of the highest priority. Most of the UXO encountered in the initial runway surface clearance were from U.S. airstrikes early in the operation. They consisted mainly of large numbers of BLU-97 sub-munitions. Small arms UXO disposal (SMUD) techniques were used when possible; blow-in-place techniques were used when SMUD was not possible.

Coalition engineer and EOD soldiers coordinated support to the task force commander in his efforts to expand the living and working areas immediately around the airfields to accommodate an ever-increasing coalition population. The procedures used to clear these areas varied based on the terrain; the level of mine and UXO contamination; the manpower, equipment, and time available; and the real estate's intended use. Because the majority of terrain to be cleared was heavily littered with all types of metallic clutter and many of the mines were constructed of non-ferrous materials, standard ordnance locators were useless. The preferred method of clearance was to use a mechanical device designed to either scrape away or pulverize the earth to a depth of 12 to 18 inches. The U.S. mine-clearing armor-plated (MCAP) dozer, the Norwegian Hydrema, the Jordanian Aardvark, and the U.S. mini-flail were used initially.

The MCAP is a D-7 bulldozer with an armored kit installed to protect its operator. It can effectively clear everything down to a depth of about 12 to 18 inches, depending on the soil makeup. Its blade, or rake, is set to "windrow" the UXO and mines into berms without detonating them. EOD soldiers then sift through the berms and dispose of, or render safe, the ordnance they locate.

Norwegian engineers used the Hydrema 910 mine-clearing vehicle. This is an articulated, wheeled vehicle with two engines, one powering the flail and the other powering the vehicle. The Jordanians used the Aardvark flail, which is similar to the Hydrema but is driven by tracks instead of wheels. The U.S. mini-flail was used for clearing tight areas around buildings or trails, but is too underpowered and prone to catastrophic detonation damage to work large areas. The flails are designed to

"EOD soldiers hurdled over or bulldozed through every obstacle they faced during OEF."

mechanically destroy UXOs and mines without detonating them.

All of the mechanical clearing devices create dust clouds so thick that the direction of travel is determined by the wind, because the operator cannot see to drive when the dust blows back on the vehicle. The MCAP is relatively resistant to detonations; the flails to a lesser degree. Operational readiness rates are dependent on spare parts, mechanics, and availability of support equipment.

Eight teams of explosive-detecting dogs and their handlers were deployed under contract from Bosnia and were used for initial sweeps of low-threat areas and follow-up sweeps of mechanically cleared high-threat areas. The teams were very successful but slow, and with the advent of higher temperatures, their number of effective working hours decreased significantly.

Explosive hazards unearthed by these operations were disposed of routinely by supporting EOD personnel. They were either blown in place, moved for consolidated disposal later, or rendered safe, depending on location and condition. Render-safe procedures were performed at an estimated 25-percent rate during clearance operations. The Army Engineer School had expressed concern that the mobility of combat maneuver forces on the battlefield could not be ensured because the existing EOD force structure was perceived to be neither sufficiently robust nor responsive enough to meet requirements. However, there was no evidence of this in OEF. All involved characterized the working relationship between the engineers at both Kandahar and Bagram as excellent.

The destruction of captured ammunition caches was a large part of the workload for EOD forces. Stockpiles of munitions of various national origin including missiles, rockets, bombs, mortars, grenades, and projectiles were encountered, often strewn with debris and UXO from recent airstrikes. The fact that no route into any mission area could be presumed to be mine-free further complicated the problem. Large caches that could not be destroyed on-site due to their proximity to people or critical infrastructure required transport to a safe disposal area. Booby-trapped caches also were found. The April 2002 deaths of three EOD soldiers in Kandahar during a cache-clearing operation tragically illustrates the necessity for extreme caution when disposing of captured munitions.

First-seen and modified ordnance was encountered in significant quantities. EOD elements did an excellent job of reporting and collecting these items for technical exploitation. At the time of this report, five pallet loads of this ordnance were undergoing exploitation by Joint Service and Technical Intelligence elements in CONUS.

LESSONS LEARNED

Three lessons are evident from the observations made of EOD operations in Afghanistan:

• A well-trained EOD soldier is more important to success than any EOD equipment.

• The quality of an EOD soldier is more important than the quantity of EOD soldiers.

• Competent EOD forces cannot be mass-produced after a crisis occurs.

EOD soldiers hurdled over or bulldozed through every obstacle they faced during OEF. Their superb training and modular organization allowed them to task-organize down to the two-man team level to meet the task force commander's priorities responsively. In the final analysis, their success is a testament to the EOD soldier who delivered a consistently outstanding performance in an environment that was as dynamic as it was harsh.

Lessons Learned

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• Competent EOD forces cannot be mass-produced after a crisis occurs.

POC: LTC John Stefanovich, Center for Army Lessons Learned (CALL) Combined Arms Assessment Team, http://call.army.mil

Editor's Note: EOD operations have taken on a significance not experienced in recent history as we deal with the proliferation of munitions, the global War on Terror, and Homeland Defense. This increased significance translates to increased exposure to operations requiring employment of EOD personnel and procedures. This exposure is not limited to EOD personnel. Commanders at all levels, across the full spectrum of organizations, must be prepared to make good risk mitigation decisions involving UXO. Risk mitigation must include the use of available personal protective equipment and limiting exposure to minimum essential personnel. Educating our soldiers and including EOD operations in our pre-deployment certification processes will go a long way toward giving leaders and soldiers the right tools to respond appropriately in an EOD operations environment.

Fighting Position, or Death Trap?

The Army recently experienced an accident where an MK19 fighting position collapsed on top of a soldier pulling guard duty. Sand shifted underneath a berm suddenly, causing the fighting position to give way—with the soldier underneath. Fortunately, two of the soldier's comrades were not under the bunker and were able to quickly dig their fellow soldier out from underneath the sand bags and wood that had fallen on him in a matter of seconds. The injured soldier was airlifted by MEDEVAC and treated for injuries to his neck immediately following the accident.

All soldiers must know how to construct solid, functional fighting positions. An improperly constructed position is actually dangerous for the soldier to occupy. It will not provide the protection from fire that he needs, and it may even collapse on him at any moment. Such unsafe structures should be torn down and rebuilt properly; otherwise, a position designed to protect could well present an even greater danger.

Throughout history, the Army has been called upon to seize key terrain and then dig in solidly to hold it. Infantrymen, assisted by their brothers-in-arms, the combat engineers, build the field fortifications and fighting positions that are key to surviving the enemy's fire and repelling his assaults. Well-constructed bunkers, trenches, and fighting positions protect soldiers and allow them to fight and survive in the deadly environment of modern combat.

On every battlefield, from the muddy trenches of World War I to the sandy desert of the Persian Gulf, improperly constructed positions have collapsed and killed or injured the soldiers they were intended to protect. Positions collapse in peacetime as well. At each of the Army's combat training centers, soldiers in improperly designed, poorly supported, and badly constructed fighting positions have been injured when the overhead cover came crashing down or the sides collapsed in on them, smothering them even as their comrades struggled to dig them out.

It is the responsibility of unit leaders to prevent this from happening. Each of them, from squad leader through battalion commander, must learn the standards for proper construction of a fighting position, and must supervise and inspect the soldiers under him as they build their positions. The fundamental design of well-constructed fighting and survivability positions is not new. Army Engineers have validated several basic designs that will survive direct and indirect fire from most enemy weapons, and that will protect the men inside while they return fire.

Field Manuals (FMs) 5-103, *Survivability*, and 5-34, *Engineer Field Data*, contain detailed designs that ensure the structural integrity of the position and the safety of the occupants. The Infantry School has published Graphic Training Aid (GTA) 7-6-1, *Fighting Position Construction Infantry Leader Reference Card*, which contains multiple illustrations and detailed leader checklists. (These references are available at http://www.adtdl.army.mil/atdl.html.)

According to FM 5-103, sandy soil can weigh as much as 100 pounds per cubic foot. A 10' x 4' roof, if covered with 18 inches of soil, could weigh 6,000 pounds—3 tons! Unless the roof is waterproofed, that weight could double as the soil soaks up water during rains. That's nearly 6 tons balancing precariously over the head of the soldier manning that position.

A properly designed and built position provides 360-degree protection instead of just shielding its occupants from the front. The selection, number, and placement of the stringers supporting overhead cover is critical to the safety of a position. Weak stringers placed too far apart simply cannot carry the load.

Another key factor is the strength and location of the support base on which the stringers rest. If the base is too weak or too close to the edge, the sides of the position will slump inward, possibly suffocating the occupants before they can be dug out.

Do not be intimidated by all of this talk of construction standards, footings, timbers, stringers, and spacing. It is not technical information that can be understood only by an engineer. This is simple soldier-skill stuff, and Infantrymen have been building good, solid positions since before World War I.

Every soldier and every leader, combat arms or not, must know these guidelines. Supervising the construction of fighting positions is one of the fundamental tasks of a Noncommissioned Officer. It has to be done to standard because the lives of the soldiers and the success of the mission depend on it. Learn how to inspect a fighting position. If you do, you will never have to dig the lifeless body of a soldier out of one that collapsed on him.

Article adapted from Spring 2002 *Infantry* magazine and authored by Arthur A. Durante Jr., Deputy Chief of Doctrine, Combined Arms and Tactics Directorate, U.S. Army Infantry School

Properly Maintain Yo

A healthy car on the open road is as fundamental to driving safety as seatbelts or obeying the speed limit. Ignoring maintenance can lead to trouble: specific parts—or an entire system—can fail and lead to a breakdown or accident. Neglecting even simple routine maintenance, such as changing the oil or checking coolant levels, can lead to poor fuel economy, unreliability, or costly breakdowns.

The first step in preventive maintenance for your POV is simple: perform routine, scheduled maintenance! Make this one of your New Year's resolutions—it's easy and could extend greatly your car's life, as well as keep you and your family safe on the open highway. To avoid costly repairs, follow the manufacturer's maintenance schedule found in your owner's manual for the type of driving you most often do. Then become familiar with your vehicle and stop, look, and listen when you suspect a problem.

The more you know about your vehicle, the more likely you'll be able to head off repair problems. You can detect many common vehicle problems by using your senses: eyeballing the area around your vehicle, listening for strange noises, sensing a difference in the way your vehicle handles, or even noticing unusual odors.

Small stains or an occasional drop of fluid under your car may not mean much. But wet spots deserve attention—check puddles immediately! Proper fluid levels are vital to the proper and safe operation of your vehicle. You can identify fluids by their color and consistency:

- Yellowish green, pastel blue, or fluorescent orange colors indicate an overheated engine or an antifreeze leak caused by a bad hose, water pump, or leaking radiator.
- Dark brown or black, oily fluid signals that the engine is leaking oil. A bad seal or gasket can cause such a leak.
- An oily red spot points to a transmission or power steering fluid leak.
- A puddle of clear water usually does not indicate a problem, and could be normal condensation from your vehicle's air conditioner.

Remember always to clean up any automotive fluid you may see in a timely manner. Most automotive fluids are toxic to some degree, especially to small children and animals.

Some problems just smell like trouble.

- The smell of burnt toast—a light, sharp odor—often signals an electrical short and burning insulation. To be safe, do not drive the vehicle until the problem is diagnosed.
- The smell of rotten eggs, a continuous, burning-sulphur smell, usually indicates a problem in the catalytic converter or other emission-control device. Do not delay diagnosis or repair if you suspect such a problem.
- A thick, acrid odor usually indicates burning oil. Look for signs of a leak if such an odor is present in your vehicle.
- The smell of gasoline vapors after a failed start could mean that you have flooded the engine. Wait a few minutes before trying to start the engine again. If the odor persists, chances are there is a leak in the fuel system, a potentially dangerous problem that requires immediate attention.
- Burning resin or acrid chemical odors could signal overheated brakes or an overheated clutch. Check to make sure the parking brake is not activated. After repeated hard braking, such as travel on mountain roads, allow the brakes to cool. If you see light smoke coming from a wheel, the problem could be a stuck brake, and the vehicle should be towed for repair.
- A sweet, steamy smell indicates a coolant leak. If the temperature gage or warning light does not indicate overheating, drive carefully to the nearest service station and keep an eye on the gages. If the odor is accompanied by a hot, metallic scent and steam is coming from under the hood, your engine has overheated. Pull over immediately—continued driving could cause severe engine damage. The vehicle should be towed for repair.

Your car can sound like trouble, too. Squeaks, squeals, rattles, rumbles, and other sounds provide valuable clues about problems and maintenance needs. Here are some common noises and what they mean:

- Squeal—a shrill, sharp noise usually related to engine speed that can indicate loose or worn power steering, fan, or air conditioning belts.
- Click—a slight, sharp noise related to either engine or vehicle speed that can mean a loose wheel cover, loose or bent fan blades, a stuck valve lifter, or low engine oil.
- Screech—a high-pitched, piercing metallic sound that usually occurs while the vehicle is in motion and generally is caused by

r POV in the New Year

brake wear indicators to let you know it's time for maintenance.

- Rumble—a low-pitched, rhythmic sound that could point to a defective exhaust pipe, converter, or muffler, or a worn universal joint or other drive-line component.
- Ping—a high-pitched, metallic tapping sound related to engine speed that is usually caused by using gas with a lower octane rating than what's recommended. Check your owner's manual for the proper octane rating. If the problem persists, engine ignition timing could be at fault.
- Heavy knock—a rhythmic, pounding sound that indicates a worn crankshaft or connecting rod bearings, or a loose transmission torque converter.
- Clunk—A random thumping sound that indicates a loose shock absorber or other suspension component, or a loose exhaust pipe or muffler.

If your car does not look, smell, or sound like it has a problem, do not get too comfortable. Difficult handling, a rough ride, vibration, and poor performance are symptoms you can feel and almost always indicate a problem. Here are some common problems associated with a car's driving performance:

Steering. Misaligned front wheels or worn steering components, such as the idler or ball joint, can cause wandering or difficulty steering in a straight line. Pulling, the vehicle's tendency to steer to the left or right, can be caused by something as routine as under-inflated tires, or as serious as a damaged or misaligned front end.

Ride and handling. Worn shock absorbers or other suspension components, or improper tire inflation, can contribute to poor cornering. While there is no hard and fast rule about when to replace shock absorbers or struts, try this test: bounce the vehicle up and down hard at each wheel, then let go. See how many times the vehicle bounces. Weak shocks will allow the vehicle to bounce twice or more. Springs do not normally wear out and do not need replacement unless one corner of the vehicle is lower than the others. Overloading your vehicle can damage the springs. Always be sure to balance your tires properly. An unbalanced or improperly balanced tire causes a vehicle to vibrate and may wear steering and suspension components prematurely.

Brakes. Brake problems have several symptoms. Schedule diagnosis and repair if the vehicle pulls to one side when the brakes are applied; if the brake pedal sinks to the floor when pressure is maintained; if you hear or feel scraping or grinding during braking; or if the BRAKE light on the instrument panel is illuminated.

Engine. The following symptoms indicate engine trouble. Get a diagnosis and schedule repair if you have difficulty starting the engine; if the CHECK ENGINE light on the instrument panel is illuminated; if the engine is idling rough or stalling; if your vehicle is experiencing poor fuel economy; if the engine is using more than one quart of oil between changes; or if the engine continues running after the key is removed.

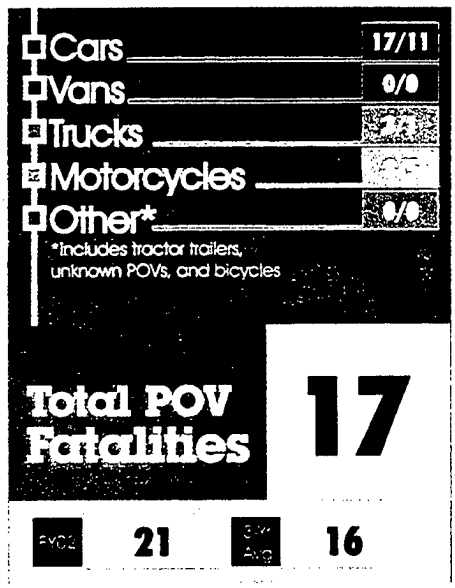
Transmission. Poor transmission performance could stem from actual component failure or a simple disconnected hose or plugged filter. When you take your car in for diagnosis, ensure the technician checks the simple problems first; transmission repairs normally are expensive. Some of the most common symptoms of transmission problems are abrupt or hard shifts between gears; delayed or no response when shifting from neutral to drive or reverse; failure to shift during normal acceleration; and slippage during acceleration (the engine speeds up, but the vehicle does not respond).

Fortunately, car trouble does not always mean major repairs. But, if your car does give you an indication of a problem, be sure to have it checked. Neglecting a major problem could mean major trouble on the open road.

Article adapted from material found on Ask an Expert Web site, www.askanexpert.net

POV UPDATE FY03

Class A-C accidents/soldiers killed



Don't Let Static El

The Army and Air Force Exchange Service (AAFES), which operates service stations worldwide, wants to remind motorists of the importance of avoiding potential problems with static electricity at the gas pump. Since the end of November 2002, three separate refueling fires at AAFES gas pumps have been reported, with all three customers being burned to some degree.

In many parts of the country, static electricity buildup is most likely to occur during the fall and winter months, when the air is cool or cold and dry–the optimal climate conditions for static electricity buildup. Static electricity can build up when a motorist exits or re-enters their vehicle during refueling. Upon returning to the vehicle fill pipe during or at the end of refueling, the motorist could experience a static discharge at the fill point, which could cause a flash fire or small sustained fire with gasoline refueling vapors.

Static electricity related fires have occurred at AAFES and other retail gasoline outlets. According to the American Petroleum Institute (API) and the Petroleum Equipment Institute (PEI), such incidents are on the increase. To date, over 150 incidents have been reported to PEI that have resulted in numerous injuries, property damage, and one fatality.

The most effective means by which a motorist can avoid static electricity problems at the gas pump is to stay outside the vehicle while refueling. While it may be very tempting to get back in the car during extremely cold weather, the average fill-up only takes around two minutes and staying outside the vehicle will greatly minimize the likelihood of any buildup of static electricity that could be discharged at the nozzle.

In the rare event a motorist does experience a fire while refueling, it is important to remember to

leave the nozzle in the fill pipe of your vehicle and back away from it. Immediately notify the station attendant to shut off all dispensing devices and pumps with emergency controls. If the facility is unattended, use the emergency shutdown button to shut off the pump and use the emergency intercom to summon help. Leaving the pump nozzle in the vehicle will prevent any fire from becoming more dangerous.

Motorists who feel the need to get back into their vehicle during refueling should discharge any static buildup upon exiting the car before going back to the pump nozzle. This can be done safely by touching a metal part of the vehicle (such as the door) or some other metal surface with a bare hand.

Consumers can minimize these and other potential refueling hazards by following safe refueling procedures all year long (a list is provided below). For more information on avoiding

ctricity Burn You

potential problems with static electricity buildup at the pump and other safe motor fuel refueling, storage, and handling guidelines, see API's web site at www.api.org/consumer and PEI's web site at www.pei.org/static.

- Turn off your vehicle engine while refueling. Put your vehicle in park and set the emergency brake. Disable or turn off any auxiliary sources of ignition such as a camper or trailer heater, cooking units, or pilot lights.
- Do not smoke or light matches or lighters while refueling at the pump or when using gasoline anywhere else.
- Use only the refueling latch provided on the gasoline dispenser nozzle; never jam the refueling latch on the nozzle open.
- Do not re-enter your vehicle during refueling.
- In the unlikely event a static-caused fire occurs while refueling, leave the nozzle in the fill pipe and back away from the vehicle. Notify the station attendant immediately.
- Do not over-fill or top off your vehicle tank, which can cause gasoline spillage.
- Avoid prolonged breathing of gasoline vapors. Use gasoline only in open areas that get plenty of fresh air. Keep your face away from the nozzle or container opening.
- When dispensing gasoline into a container, use only an approved portable container and place it on the ground while refueling to avoid possible static electricity ignition of fuel vapors. Containers should never be filled while inside a vehicle or its trunk, the bed of a pickup truck, or the floor of a trailer.
- Only store gasoline in approved containers, as required by federal and state authorities. Never store gasoline in glass or any other unapproved container.
- When filling a portable container, manually control the nozzle valve throughout the filling process. Fill a portable container slowly to decrease the chance of static electricity buildup and minimize spilling or splattering.
- Fill container no more than 95 percent full to allow for expansion.
- Place the cap tightly on the container after filling, and do not use containers that do not seal properly.
- If gasoline spills on the container, make sure that it has evaporated before you place the container in your vehicle. Report spills to the attendant.
- When transporting gasoline in a portable container, make sure the container is secured against tipping and sliding, and never leave it in direct sunlight or in the trunk of a car.
- Never siphon gasoline by mouth or put gasoline in your mouth for any reason. Gasoline can be harmful or fatal if swallowed. If someone swallows gasoline, do not induce vomiting. Contact a doctor immediately.
- Keep gasoline away from your eyes and skin; it may cause irritation. Remove gasoline-soaked clothing immediately.
- Use gasoline as a motor fuel only. Never use gasoline to wash your hands or as a cleaning solvent.
- Do not use cellular telephones while refueling your vehicle.

Article printed with permission from AAFES Corporate Communications Office, Mr. Fred Bluhm, bluhm@aafes.com

Keep Your Workplace Safe This Year

What is it that we find so special about the first day of January each year? Even though it is really just another day, many of us have given it a special significance. We see it as a time to "wipe the slate clean"—an opportunity we have been given to work on our shortcomings. Some of the more common resolutions we make each year are to spend more quality time with our families, quit smoking, lose weight, get more exercise, put away more money in the bank, and work harder at our jobs. While each of these resolutions are admirable and would facilitate a positive change in our lives if we were to stick to them, usually by March they are all but forgotten. If you could make a New Year's resolution this year that could prevent you from having an accident and possibly save not only your life, but the lives of others, would you make it and stick to it?

Before you make such a resolution, ask yourself these questions:

1. How many times during the past year did I walk past an unsafe condition in my workplace and not stop to correct it?

2. How many times did I observe one of my co-workers engaged in an unsafe behavior and not take the time to say something to them about it?

3. How many times did I find myself taking shortcuts that significantly increased the risks associated with the tasks I was performing?

Now that you have asked and hopefully answered these questions truthfully, consider making this your New Year's resolution: **I resolve to do everything in my power to protect myself and my co-workers from accidents and injuries this year.** Okay. You've made the commitment, now how do you stick to it? Here are some tips that you may find helpful:

1. Remind personnel to keep floor surfaces clean and dry, and make sure carpeting is well secured and free of torn seams that could cause trips and falls.

2. Ask personnel to check all exits to ensure they are clearly marked, visible, adequately lit, and free of obstructions.

3. Inspect electrical appliances and equipment to ensure they are in good condition and properly grounded, and that there are a sufficient number of receptacles to prevent overloading of circuits.

4. Ask personnel to inspect their chairs to ensure they are in good condition and ergonomically sound, with no loose casters. Furniture should be free of sharp edges, points, and splinters.

5. Remind machine operators to ensure all belts, wheels, fans, pinch points, and other dangerous moving parts of machinery are adequately guarded.

6. Survey personnel to ensure they have been trained on the proper use of hazardous substances, and that they have been provided any necessary personal protective equipment. The materials used should be labeled, sealed, and stored properly. Ensure that material safety data sheets (MSDSs) are available for all hazardous substances in the workplace, and that all personnel know where the sheets are kept.

7. Check to make sure personnel who operate a vehicle as part of their job have been trained and licensed properly, that they understand how to perform preventive maintenance checks and services, and that they always wear their seatbelts. In addition, those who must communicate with the office periodically during the course of the day should be reminded never to operate a cellular telephone while the vehicle is in motion.

I hope you'll take up the challenge to accept and stick to the New Year's resolution I have recommended, because it could make for one of the most rewarding years of your life, as well as the lives of the friends and loved ones who care about you. Happy New Year!

POC: Frank McClanahan, Policy and Programs Division, U.S. Army Safety Center, DSN 558-1154, (334) 255-1154, e-mail frank.mcclanahan@safetycenter.army.mil

Q. I am looking for a regulation that would help justify purchasing a camera for use in a unit safety office. Can you help?

A. Take a look at Army Regulation (AR) 385-10, *Army Safety Program*, paragraph 2-1e, a portion of which states, "Commanders will provide sufficient funds and other resources to carry out all responsibilities of this regulation to assure safety and OH program effectiveness." As key elements of a safety program consist of inspections, training, and accident investigation, cameras (especially digital models) can be extremely useful tools in assisting the briefing of commanders on workplace deficiencies, developing slide presentations for training, and documenting accident scenes during investigations.

Q. Are there any hazards associated with the use of night vision devices while wearing a nuclear, biological, chemical (NBC) mask?

A. Check out Training Circular (TC) 21-305-2, *Night Vision Goggles*, Chapter 4. If you will review Transparency 19f ("Driving With Goggles"), Item (5), you will see that it states the following: "Operating a vehicle with the goggles over the NBC mask will further reduce your field of vision to about 20 degrees. (This practice is not recommended.)"

Q. I am an installation safety manager and was contacted recently for assistance in supporting rappel training for ROTC cadets. Can you provide me a resource that spells out the requirements to conduct this training?

A. You should be able to find the answers to your questions in Section 5-5 of CCR 385-10, *Cadet Command Safety Program*. The website address is www-rotc.monroe.army.mil. Once there, select "The Right Site," and this will take you to the regulations.

Q. I have been looking for a publication and haven't been able to locate it. AR 385-30, *Color Code and Marking*, is listed as obsolete, but I have seen another publication referenced entitled *Safety Color Code Markings, Signs, and Tags Information Guide*. Does this publication still exist?

A. AR 385-30 was rescinded due to specific and varying color code requirements for many commodities, hazardous materials, and Army operations. The U.S. Army Safety Center published *Safety Color Code Markings, Signs, and Tags Information Guide* in February 1994. The guide provides general information and a list of references for specific commodities, hazardous materials, and operations. The guide is not currently available in electronic format, but you can obtain a printed copy by contacting our Media and Marketing Division at DSN 558-2062 (334-255-2062), or e-mail forehans@safetycenter.army.mil to request a copy.

Editor's note: *Beginning in January 2003, Countermeasure will begin running a monthly feature, "FAQs From You," which addresses frequently asked questions from the field as received by the U.S. Army Safety Center's Policy and Programs Division. We welcome your questions! Just e-mail overstrh@safetycenter.army.mil or call DSN 558-2477 (334-255-2477), and we will address your question as soon as possible.*

Food Safety a Click Away

Soldiers now can get more information about product recalls courtesy of a new Web site from the Defense Commissary Agency (DeCA). The "Food Safety Information" button on http://www.commissaries.com takes visitors to a section that publicizes pertinent food safety alerts and product recalls. It also links to other Web sites offering a wealth of food safety information.

Recalls are part of the safety chain that involve customer action and can be confusing at times. To lessen confusion, DeCA is harnessing the power of the Internet to ensure the broadest dissemination of accurate information. Recalls are usually local or regional and receive adequate publicity. But with almost 280 commissaries worldwide, DeCA is leveraging the extra link of Web site publicity.

The agency's Web site gives information on significant food safety alerts and recalls that may affect commissary shoppers. In most cases, recalled products are removed from supply systems before they are sold. However, should a recalled product end up in their refrigerator, customers can return the products to their commissary for a refund.

DeCA is integral to the Department of Defense's extensive food safety network, which includes monitoring acquisition and transportation processes to ensure service members have the best and safest food products available.

Adapted from DefenseLink news article, www.defenselink.mil

Holiday Toy Recalls

The wrapping paper may be thrown away, but that does not mean the hazards associated with some holiday purchases won't last many seasons to come. The U.S. Consumer Product Safety Commission (CPSC) recently released the newest list of recalled toys on their Web site, www.cpsc.gov. An abbreviated version of the list is as follows:

- **Gearbox Pedal Cars**, distributed by Alpha International Inc. The paint on some of these cars contains high lead levels. Call (800) 368-6367 for more information.

- **Air Powered Rockets**, distributed by Estes Industries. The foam tips can break off, exposing sharp edges that can cause facial lacerations or eye injuries. Call (800) 576-5811 for more information.

- **Firestormer and Skyblazer Toy Air-powered Planes**, distributed by Spin Master Toys. The plastic air intake chamber of the air-powered toy planes can burst, throwing plastic pieces that can cause lacerations, bruises, or abrasions. Call (800) 622-8339 for more information.

- **Animal Toy Sponges**, distributed by Dollar Tree Stores. The eyes on the toys can detach, posing a choking hazard to young children. Call (800) 876-8077 for more information.

- **Stuffed Polyester Pool Animals**, distributed by Dollar Tree Stores. The seams of the toys can separate, exposing the polyester stuffing and foam beads. Call (800) 876-8077 for more information.

- **Cotton Candy Machine**, distributed by Rose Art Industries. The electric motor on the machine can jam and overheat, posing a fire hazard. Call (888) 262-4474 for more information.

- **Baby Walkers**, distributed by Oriental Trading Company and Bikepro. The walkers will fit through a standard doorway and are not designed to stop at the edge of a step. Babies using these walkers can be seriously injured or killed if they fall down stairs. Call Oriental Trading Company at (866) 666-9868 or Bikepro at (800) 261-2559 for more information.

- **Toy Tracks on Activity Center**, distributed by Graco Children's Products. The toy track can break, creating a cut or pinch hazard, and exposed small parts could pose a choking hazard to young children. Call (800) 673-0392 for more information.

In addition to the CPSC Web site, the complete list of recalled toys can be obtained by calling (800) 638-2772.

Adapted from the CPSC Web site, www.cpsc.gov

ACCIDENT BRIEFS

Information based on preliminary reports of ground accidents.

ACV

Class A

■ Soldier was killed when the M1A1 tank he was operating fell into a sinkhole filled with mud and water. SM was pronounced dead at the local hospital.

■ Two soldiers were killed when they were struck by an M1A1 tank. The tank was maneuvering in response to simulated incoming artillery at the time of the accident.

AMV

Class A (Damage)

■ M3A2 was damaged extensively after a fire started in the crew compartment during a post-service road check.

Class B (Damage)

■ Soldier was operating an M1097A2 when he noticed a fire in the vehicle. The vehicle was damaged extensively. SM was uninjured.

POV

Class A

■ Soldier was killed when he lost control of his POV and the vehicle overturned.

■ Soldier was killed when his POV ran off the roadway, hit a tree, and overturned. SM was thrown from the vehicle.

■ Soldier was killed when he lost control of his motorcycle, ran off the roadway, and struck the back of a parked vehicle.

■ Soldier was killed when his POV ran off the roadway and struck a parked tractor-trailer.

Personnel Injury

Class A

■ Soldier was killed when his M16 rifle discharged. SM had been cleaning the weapon and was performing a function check with the butt of the rifle on the floor at the time of the accident.

■ Soldier died from complications that resulted from heat-related injuries sustained during a 5-mile PT run. SM was initially treated for a body temperature of 105.7 degrees, which caused liver and kidney damage.

■ Soldier collapsed while running with his company for PT. SM was taken to the local emergency room, where he was pronounced dead.

Class B

■ Soldier sustained fractures to his leg resulting in a permanent partial disability during a deliberate demolition operation. Another SM also was injured in the accident and received minor injuries.

■ Soldier received a gunshot wound to his abdomen while participating in a live fire maneuver exercise. The injury resulted in a permanent partial disability.

■ Soldier lost the tip of his left-hand middle finger when an unidentified and unexploded piece of ordnance detonated in his hand. SM had reportedly presumed the ordnance was a weapon cleaning rod of foreign origin and was in the process of removing the tip portion when the device detonated.

■ Soldier's finger was amputated when it was caught in a winch cable. SM had been performing maintenance in the field at the time of the accident.

■ Soldier's finger was amputated at the cuticle when an M981 engine shifted during replacement.

Class C

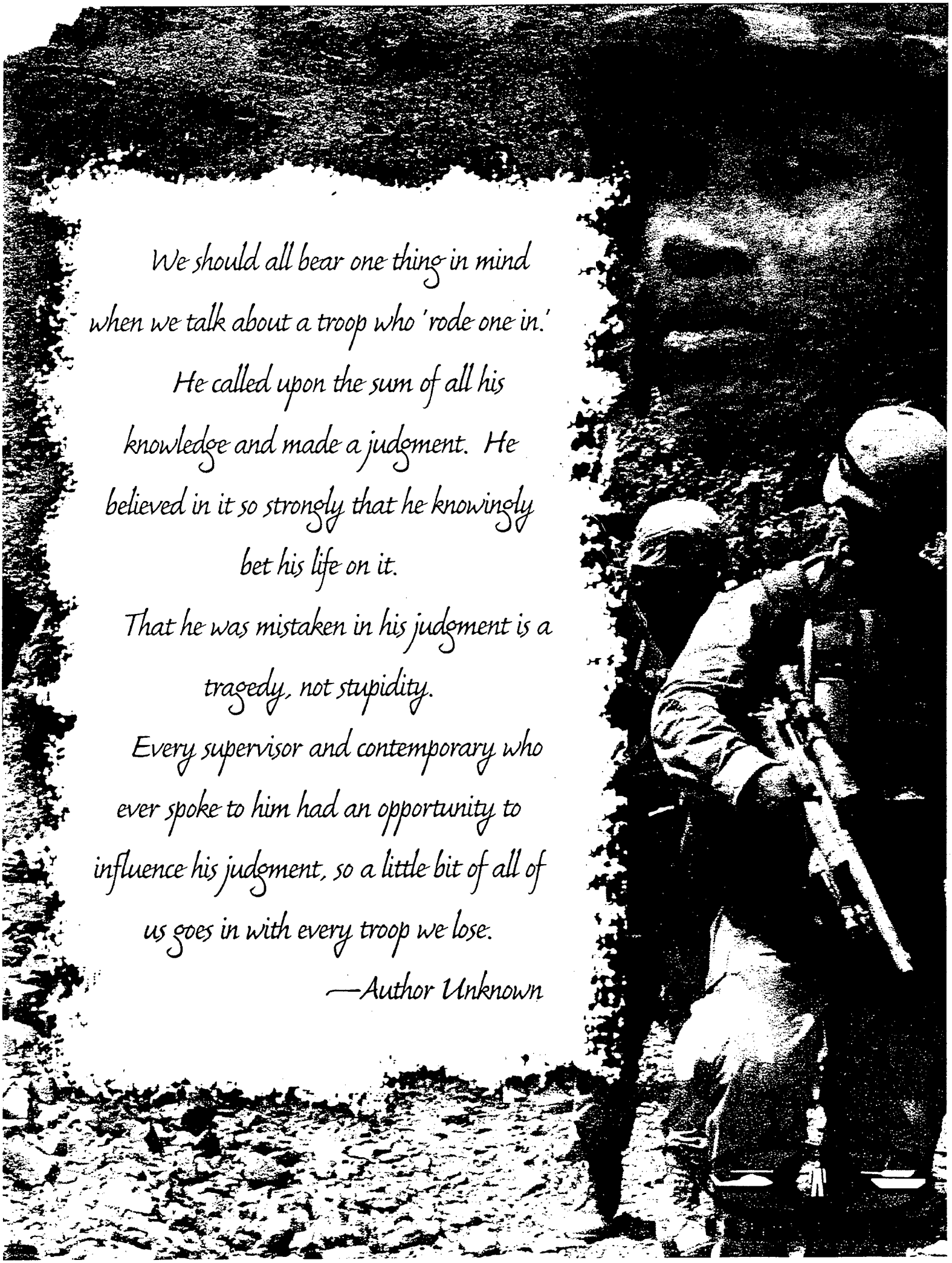
■ Soldier sustained fractures to his foot after a trailer he was disconnecting from an M113 fell from the vehicle. The rolling wheel designed to support the trailer was not locked, which allowed the trailer to fall on SM's foot.

■ Soldier dislocated his shoulder during preparation for an upcoming boxing match. SM attempted to block a punch from another SM with his gloves and forearm, but was hit in the elbow by the punch, which caused the injury.

■ Soldier sustained fractures to his finger while uploading loose 30mm rounds into an AH-64. SM was attempting to free a jammed round by putting his finger in the side-loader assembly. The side-loader actuated while SM's finger was still inside, resulting in crushing injuries.

■ Soldier received lacerations that required 18 staples after he hit his head on his barracks wall. SM had been drinking at a party before the accident.

■ Soldier sustained injuries to his neck after an MK19 fighting position collapsed on top of him. SM was performing guard duty when the sand shifted under a berm, causing the sand bags and wood overhead to fall on top of SM. Two other SMs who were not underneath the bunker quickly dug SM1 out.



We should all bear one thing in mind when we talk about a troop who 'rode one in.' He called upon the sum of all his knowledge and made a judgment. He believed in it so strongly that he knowingly bet his life on it.

That he was mistaken in his judgment is a tragedy, not stupidity.

Every supervisor and contemporary who ever spoke to him had an opportunity to influence his judgment, so a little bit of all of us goes in with every troop we lose.

—Author Unknown