



ARMY GROUND RISK MANAGEMENT PUBLICATION

COUNTERMEASURE

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FY95

FY96

FY97

FY97

Safety Record BEST EVER!

The payoff for reduction in ground accidents in fiscal year 97 was substantial; a high state of readiness along with 9 percent fewer accidents, 48 fewer fatalities, and a savings of more than \$83.3 million over last year.

The tremendous credit goes to Army leaders at all levels—the commanders who establish clear, achievable standards, the trainers who teach the standards to soldiers, and the first-line leaders who enforce the standards. Credit also goes to the disciplined soldiers who make up today's Army—soldiers who follow the standards.

From My Position

FY 97 Accidents

I can't believe another year has passed since being assigned to the U.S. Army Safety Center. As a System Safety NCO, my job is to review accident reports. Let me tell you, I've had some eye-opening experiences this past year! I don't get a chance to physically see or witness what is actually happening on the tank line, the firing ranges, or other training sites. What I do see are the results of situations gone wrong. I see the injuries and deaths of our soldiers.

Although we had a fantastic year in FY97 in Army safety, the number of soldiers lost and injured by unsafe acts and conditions is still overwhelming. Total Army accidents claimed 146 soldiers last year.

When people talk safety, they almost always include numbers in their discussion. Accident rates, number of accidents, dollar losses, and number of fatalities are some of the

more popular figures used in safety discussions and articles. While these figures are essential in measuring accident trends, often their full meaning is missing—the loss of a soldier.

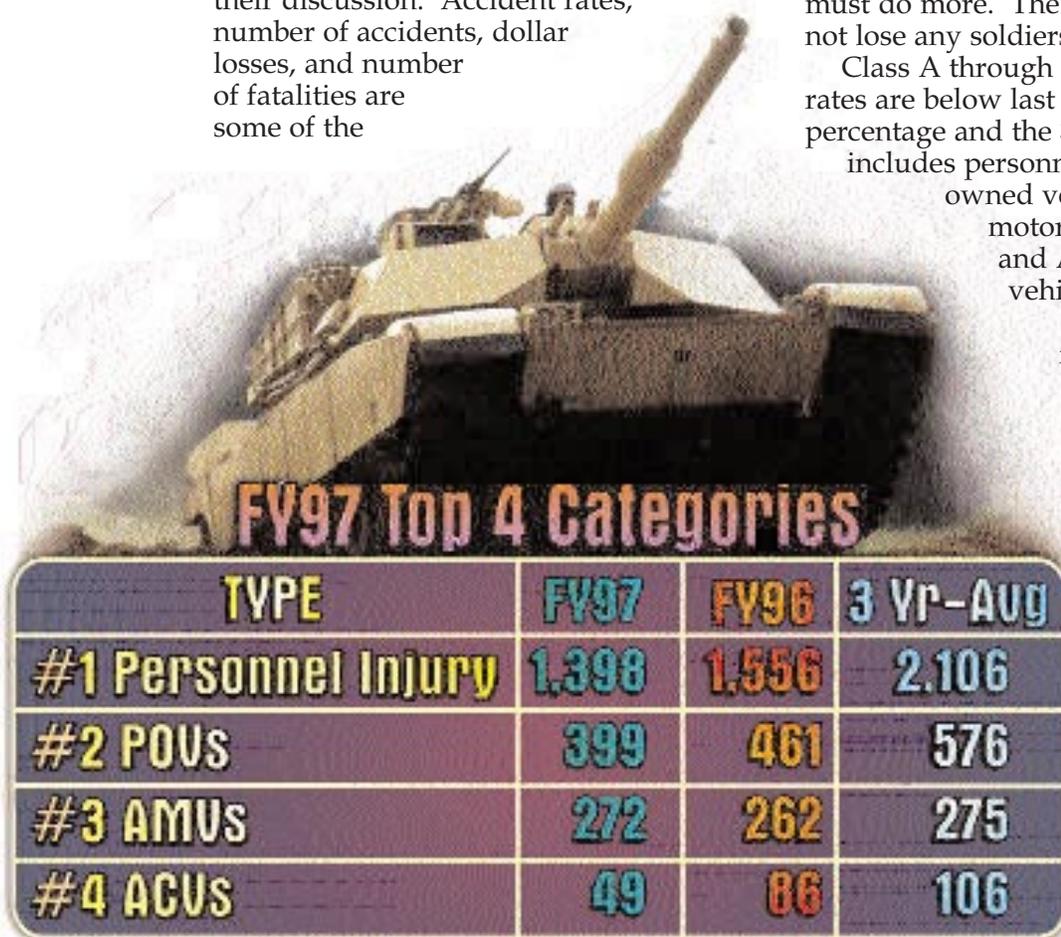
While the loss of one soldier is one too many, the number and rate of fatalities continue to show a downward trend. The rate of 0.25 fatalities per 1,000 soldiers is 25 percent below last year and 26 percent below the 3-year average. This is a significant decrease of accidents this year. The decline in numbers may sound like good news, but 146 soldiers lost in one year is still unnecessary. We expect losses in a combat environment, but we're losing soldiers during peacetime, during training exercises, on and off duty. The smaller numbers may say that we are doing better, but we still must do more. The objective here is to not lose any soldiers to accidents.

Class A through C ground accident rates are below last fiscal year's percentage and the 3-year average. This includes personnel injury, privately owned vehicles (POVs), Army motor vehicles (AMVs), and Army combat vehicles (ACVs).

The following figures are more than just numbers out of the Army Safety Center computer, they are a measurement of direct results of the integration of risk management into schoolhouse training and unit mission execution.

Personnel Injury

Personnel injury accidents were down



considerably from FY 96. There were 1,398 personnel injuries resulting in a rate of 2.39 accidents per 1,000 soldiers. Combat soldiering injuries led in this category, followed by sports injuries. Tactical parachuting was the top accident producer in the combat soldiering category. A few accidental losses include the following:

- During a night static line jump, a soldier's foot was entangled in another soldier's parachute. His parachute collapsed 100 to 200 feet above the ground. As the higher jumper, he failed to execute his 3rd point of performance, which resulted in a collision with the parachute of another jumper and loss of air. The 3rd point of performance states, "Keep a sharp lookout for all jumpers during entire descent." Remember the three rules of the descent: (1) Look before you turn; (2) Turn right to avoid collision; and (3) Lower jumper has the right of way. Maintain at least a 50-foot separation and avoid other jumpers.

- A soldier was killed when he was sucked out of a C-130 aircraft when he failed to maintain positive control of his reserve rip cord. The handle was hung up on the aircraft and he was sucked out by the deploying chute. His main and reserve parachutes were both ripped by the force of exit and became entangled. Neither parachute fully opened.

- A soldier suffering from a heat injury, drank 10-14 canteens of water over a 2-hour period. He subsequently died from over-hydration. Proposed Army guidelines, which are currently under review, recommend a maximum water intake of 1-1/4 quarts of water per hour in heat category 5 conditions, with daily fluid intake not to exceed 10 quarts. These changes will be incorporated into future published fluid replacement doctrine.

Privately owned vehicles (POVs)

Soldiers experienced 399 POV accidents for an accident rate of

0.68. This rate is 12 percent lower than the previous year and 26 percent lower than the 3-year average. Accidents resulting from excessive speed continues to be the prevalent cause factor. Other common causation factors are inattention to detail, traveling too fast for conditions, and driving while fatigued.

Army motor vehicle (AMV)

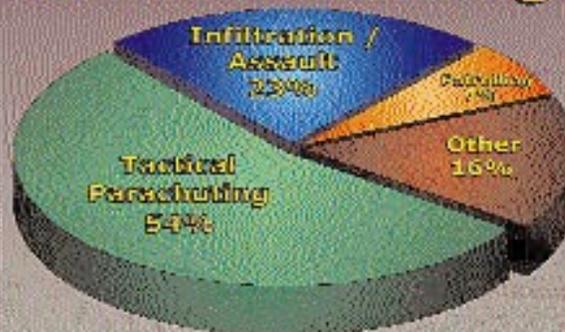
There were 272 AMV accidents in FY 97. The majority of these accidents occur in administrative vehicles, such as sedans, vans, and buses. Light tactical vehicles, such as the CUCV and HMMWV are closely behind this category. An analysis

Personnel Injury Accidents Class A-C

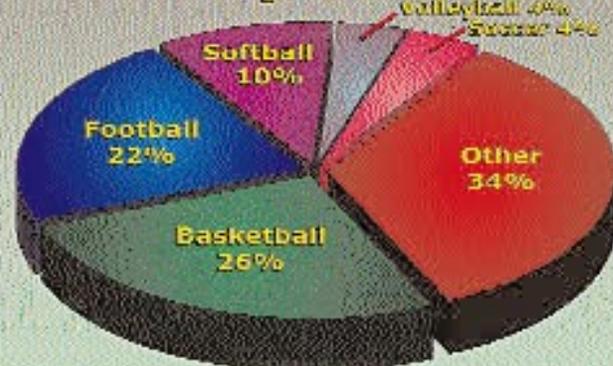
Leading Accident Activities

Soldier Activity	FY97	FY96	3-Yr Avg
Combat Soldiering	310	363	412
Sports	252	278	441
Slips, Trips, & Falls	217	233	314

Combat Soldiering



Sports



of the hazards among these accidents reveals several commonalities, such as excessive speed, loss of situational awareness, and failure to take precautions against adverse weather conditions. These hazards closely mimic the same hazards occurring in POV accidents. This indicates that soldiers are practicing the same careless habits and thought processes in the unit AMV as they do in their own POV. The following AMV accidents should have been prevented, but instead claimed the lives of our soldiers and destroyed our equipment.

- Two soldiers, both passengers, were killed when the driver lost control of an M923 5-ton truck while speeding around a curve. The vehicle flipped, ejecting all three occupants. No one was wearing a seat belt.

- A soldier (passenger) was killed when the driver of an M998 HMMWV lost control of his vehicle. The vehicle left the roadway and struck a tree, ejecting both occupants. The driver failed to pay attention to road conditions. Neither occupant was wearing a seat belt.

- A soldier, while sleeping in a squad perimeter, was struck and killed by a 5-ton truck. The vehicle was operating under blackout conditions and was not using night vision devices. The ground guide was riding on the running board. Both the driver and the ground guide failed to follow their squad leader's instructions to stay on the road. They elected to leave the roadway and take a shortcut through an infantry platoon perimeter.

- Two soldiers were inflating a HEMTT tire without the use of a tire cage. When the tire exploded, one soldier suffered a broken leg and arm, and the other suffered fatal head injuries.

Army combat vehicles (ACV).

There were 49 ACV accidents in FY 97. This is a significant drop of 43 percent from FY 96 and 54 percent below the 3-year average. Combining accidents for both wheeled and tracked vehicles resulted in a rate of 0.54, which is approximately 7 percent lower than last year. The majority of ACV accidents occur in M1 Abrams tanks, followed closely by the M2/M3 Bradley and M113. The most common hazards among all ACV accidents are turret movement, cross-country movement, and failure to clear the recoil

path of the weapons system. While not a systemic trend, the improper use and maintenance of night vision devices (NVDs) are issues that warrant special attention. The following are a few of the ACV accidents that should not have happened:

- The driver of an M113 carrier died of injuries received when he was struck in the head by the gun tube of an M1 Abrams tank, as the two convoys passed each other on a tank trail at night. The convoy containing the M113 was either not using night vision systems or was using them in a binocular mode. The crew of the M1A1 did not properly communicate and react to road and traffic hazards. The tank commander was engrossed in the tactical situation and failed to react to real-life training hazards.

- During a 155mm Howitzer direct-fire engagement, a soldier sustained a permanent total disability injury when he was struck in the head by a fragment. The battery commander did not ensure minimum safe distance from the gun position to the target. He engaged a target that was only 535 meters from the howitzer position and the unprotected observers, instead of a minimum distance of 750 meters required by AR 385-63. An NCO failed to call cease fire even after finding fragments from earlier shots.

- A soldier was killed when the FISTV (M113) he was driving went into a ditch and overturned. The driver's training program was cut short in order to meet an exercise schedule.

The accident numbers and rates are decreasing, which indicate that efforts are being made to prevent the number of accidents. Inattention to detail, ignoring safety standards, and inadequate leader involvement are areas we must improve. We must continue to integrate safety into everything we do both on and off duty. Safety is not just the commander's business, it is everybody's business. Do your part and help not only yourself, but help your fellow soldier stay out of harm's way in 1998.

PROTECT THE FORCE THROUGH RISK MANAGEMENT & SAFETY IN 1998!

POC: SFC Erwin Bailey, Armor Safety Specialist, U.S. Army Safety Center, DSN 558-2908 or COMM (334) 255-2908

We must continue to integrate safety into everything we do both on and off duty.

Safety Center SGM says farewell

The Safety Center Sergeant Major, SGM Greg McCann, departs the Safety Center in January to assume duties as the Command Sergeant Major, 4-101st Airborne Division, Fort Campbell, KY.

As I prepare to depart the Safety Center, I want to say a few words to the readers of Countermeasure about priorities. I have visited many of your units and installations during my tenure here, and one recurring comment I hear is that safety often is not a priority in some leaders' way of thinking. They talk a great deal about safety, but when it comes time to commit resources such as people, money, or time, the priority just doesn't seem to be there.

Priorities...in the safety business, we talk about blood priorities. Those are safety-related items that did not become items of interest to the chain of command until after the accident occurred. The whole notion of risk management is to prevent the accident by proactive control of hazards by those in the position to be able to influence the mission. That includes every member of the Army, soldier and civilian. If your unit is not integrating risk management into your unit training program, maybe you haven't had to implement that "blood priority" yet. Will you wait until someone's blood makes risk management a priority for you?

One thing we must bear in mind about the safety program: it is not the safety manager's program, nor is it the safety officer or safety NCO's program; it is the commander's program, and is therefore a leaders' program. Safety programs should never seek to restrict the conduct of the mission. Safety programs should seek to find ways, using the risk management process, to accomplish the mission while allowing leaders to control hazards, accept only necessary risks, and make conscious risk decisions. The whole idea is to analyze the mission and the subtasks involved to determine how to accomplish the mission with the lowest risk exposure possible.

Having said that, leaders don't often have the accidents; soldiers and workers are the ones performing the hazardous duties. It makes sense, then, that soldiers and workers require

education in the risk management process to include its practical application in the unit or in the workplace. Does this mean we should block two hours every week on the unit training schedule for risk management training for the soldiers? No, of course not. Even if we had the time for that (and most of you don't), that would probably be a waste of time. What needs to be done is some initial risk management training (there are tools available from the Safety Center and from your Division/Installation Safety Manager for this) followed by reinforcement training. The reinforcement training is accomplished by integrating risk management into all other unit training until it becomes second nature for leaders, soldiers, and workers.

Of course, this kind of priority won't happen in your unit until the commander and subordinate leaders emphasize this type of integration. Can your unit afford the time to integrate risk management into your unit training program? Let me ask that question another way: how can your unit NOT afford to integrate risk management into the unit training program? How many lives or how much money is worth the amount of time it takes to get your chain of command thinking risk management in training? And, by the way, we train as we fight...so risk management integrated into unit training inherently becomes risk management integrated into the way the unit trains and fights.

My tenure with the Safety Center has been very rewarding for me both personally and professionally. I have learned a tremendous amount from the many professionals with whom I have had the privilege of working, professionals in the Army Safety community including soldiers in the active and reserve components, civilian safety managers and specialists, and leaders at all levels. For the most part, all of these people are dedicated to helping the Army reduce accidents by the proactive use of risk management. I charge everyone who reads the Safety Center's publications to help continue to **PROTECT THE FORCE THROUGH RISK MANAGEMENT!**

Fatigue

Fatigued soldiers perform poorly, behave carelessly, tolerate greater errors, and become inattentive. They display decreased motivation, increased irritability and depression, and/or low morale.

Fatigued soldiers are a hazard in Army operations. Leaders should watch for behavior changes that indicate soldiers are fatigued and stressed. For example, the following are signs of fatigue:

- Difficulty in concentrating and thinking clearly.
- Poor and careless performance.
- Greater tolerance for error.
- Inattention to minor, but potentially important, details.
- Increased lapses of attention.
- Increased irritability.
- Decreased motivation and attempts to conserve effort.
- Increased errors.
- Slow and irregular reaction times.
- Impairment in communicating and cooperating with other soldiers, particularly when working as a crew.
- Complaints of headaches or stomachaches.
- Feelings of depression and poor morale.
- Loss of appetite.

Controls

While there is no substitute for adequate sleep, rest, or time off, there are some short-term solutions leaders can use to control the hazards presented by fatigued soldiers.

- Require a moderate work pace on physically demanding tasks.
- Provide periodic rest breaks to permit physiological and/or mental recovery.
- Offer diverting physical activities (for example, alternate working soldiers between heavy- and light-duty tasks).
- Maintain high standards of physical fitness. Emphasize the importance of daily PT. Allow company time for group PT/games to improve morale.
- Ensure soldiers are adequately rested before their work shifts.
- Adjust the complexity of duties and make changes in assignment where possible to prevent boredom.
- Provide breaks, naps, or time off after tasks have been completed.
- Provide nutritional food before, after, and/or during work.
- Ensure soldiers maintain good personal hygiene and health practices.

Fatigue levels tend to be higher at the midpoint and toward the end of a work shift than at other times during the day. In industry, accidents peak during the last 2 hours of a 10-hour day, presumably because of fatigue. Generally alertness declines sharply from 1600 to 2300 during a normal day, and after 2300 the probability that people will lapse into sleep increases dramatically. Otherwise normally-functioning soldiers may suffer from short, intermittent episodes of fatigue, especially when sleep deprived. These episodes are characterized by very brief lapses in the performance of tasks during which details are missed, accuracy is impaired, and/or performance is slowed.

(Adapted from research performed by Dr. J. Lynn Caldwell, U.S. Army Aeromedical Research Laboratory (USAARL), Fort Rucker, AL, and published in a Crew Endurance Leader's Guide, a joint effort of USAARL and the Army Safety Center. ♦

Invitation to Disaster

A leaky or flooded M1941 space heater is an open invitation to disaster, whether it be a tent fire or noxious fume inhalation. Decline that invitation with good preventive maintenance and sound operating procedures. Follow these simple checks and make your winters warm and safe.

Fuel lines. Before lighting your heater, check the fuel lines and connections for leaks. Fix any leaks before lighting up. When you hook up the overflow line, remember to:

- Keep the hose lower than the fuel overflow connection on the float valve assembly.
- Keep kinks out of the line.
- Keep the line out of traffic areas.
- Keep the line running downward, outside and away from the tent.
- Use an approved container to catch the overflow fuel.

Heater setup. The fuel control valve will work the way it's supposed to work only if the heater and valve are at or near level.

For tents with wooden floors, set the stove in a sandbox or on some other non-combustible surface. Use a sandbox if you're setting the heater on top of snow, too. Otherwise the heater melts its way into the snow.

Firing it up. When starting the heater on oil or diesel, turn the ON-OFF valve to ON and set the adjustment knob to 9. After the bottom of the burner gets wet with fuel, turn the adjustment knob to 0. Drop a small wad of lighted paper or a lighted piece of oily rag into the burner.

If you're burning gasoline, begin by dropping a lighted match or burning paper into the burner. Then, turn the ON-OFF valve to ON with the adjustment knob set to 0. **Keep your face and hands away from the opening!**

Replace the top lid when the bottom of the heater is full of fire.

Adjusting the flame. The heater takes about 5 minutes to warm up with gasoline, 15 minutes for oil. After that much time has passed, use the adjustment knob to adjust the flame.

● **Gasoline:** Set the adjustment knob between 0 and 7. Setting it above 7 wastes fuel, makes heavy smoke, and is a safety hazard.

● **Oil/Diesel:** Set the knob between 0 and 9, but never leave the knob at 9, even in the coldest weather. At the maximum setting, the heater or the flue can get hot enough to set your tent on fire.

Note: If you get heavy, black smoke from your heater, turn the adjustment knob to 0 and let the excess fuel burn off. Then reset the control knob.

Keep fuel strainer clean. A clean fuel strainer lets your heater get a good flow of fuel. Be sure not to damage or bend the strainer when you clean it. A damaged strainer can let unfiltered fuel into the system which can clog the float valve assembly.

Replace a damaged strainer with NSN 5411-01-231-1754.

Keep 'em burning!

-adapted from PS magazine



Ergo Corner

Doing things right can change your day!

The following article is part five of a six-part series that was published in the *Unit Safety Update*, a publication of the I Corps and Fort Lewis Safety Office.

Strain and fatigue on the job can be reduced; how you approach your job tasks can greatly influence how you feel by the end of the work day. Consider applying the following to your job situation.

Vary work tasks.

Performing the same task for a long period of time can subject your body to repetitive pressure. By keeping your body in one position for a long period of time cannot only

result in fatigue, but muscle stiffness. For example, drilling a large number of holes, one after another, requires you to be in the same body position and perform the same motions over and over. When possible, vary your activities—drill some of the holes, then perform another task before drilling again.

Make a point to move occasionally. If you sit a lot, stand up to perform some work.

Use large muscle groups rather than small muscle groups when possible.

Have you noticed the difference between holding an object with a pinch grip—using your fingers and thumb—and holding the same object with your whole hand? The pinch grip requires a great deal of force on your smaller muscles.

If you can hold the object with your whole hand, the load is spread over more tendons and a larger portion of your forearm muscles.

Holding the object with two hands reduces the force on particular muscles even more and results in less stress on your body.

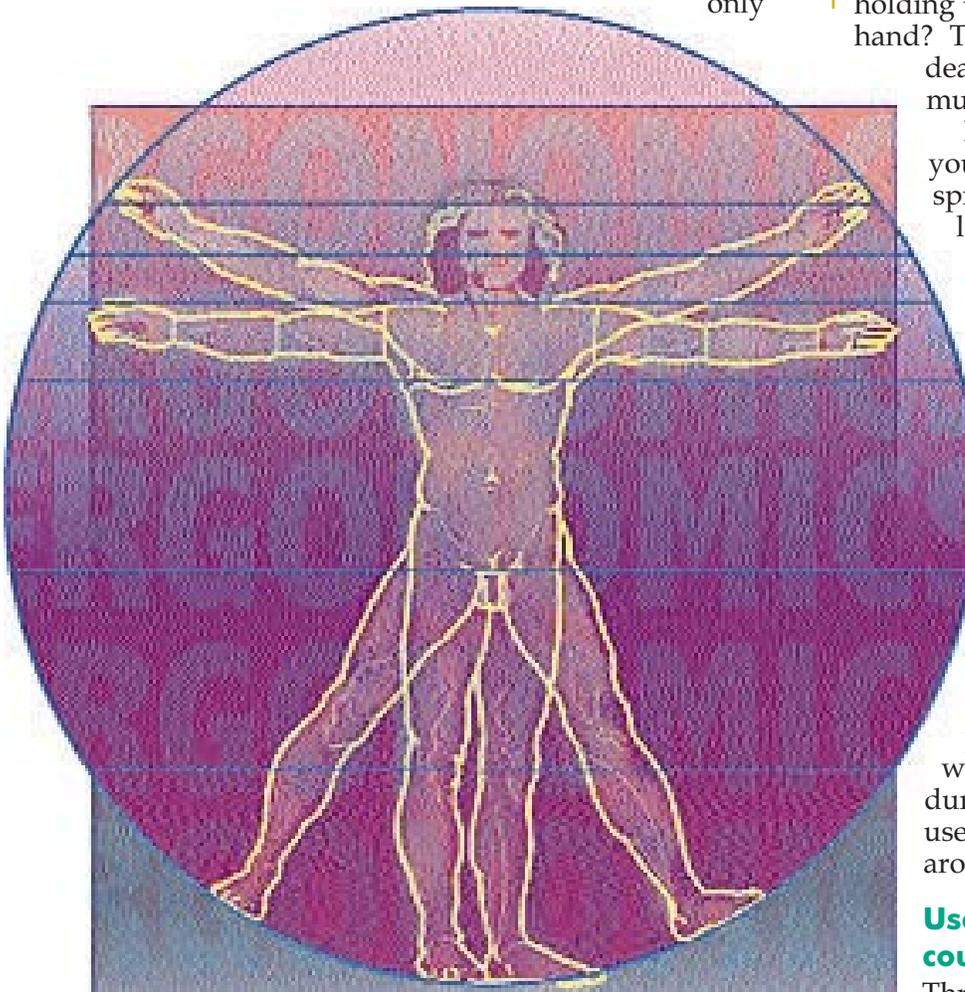
Use work breaks to your best advantage.

A work break is a good time to change body positions. Changing positions will make you more comfortable and reduce the possibility of injury.

If you have to stand in one place for a long time while working, either sit or take a walk during your break. If you sit a lot, use this time to stand or walk around.

Use rest pauses to counterstretch.

Throughout the day, it is important



A Model VDT Workstation

- Adequate ventilation
- No excess noise or crowding
- Adequate privacy
- Social contact with coworkers
- Relaxing colors and non-glare surfaces
- Windows with blinds or curtains
- Indirect general lighting; moderate brightness (may be turned off if desired)
- Direct, adjustable task lighting
- Copy holder at approximately same distance as screen
- Adequate space for copy holder and other materials
- Moveable keyboard on surface with adjustable height, arms approximately parallel to the floor
- Thighs approximately parallel to the floor
- Seat pan short enough (front to back) for knee clearance and slanted downward at the front
- Feet firmly resting on the floor, footrest for shorter people
- Printer in separate area; if located near work area, printer equipped with noise shield
- Terminal regularly serviced and cleaned; records kept where easily accessible
- Screen about 1 to 2 feet away and middle of screen slightly below eye level; characters large and sharp enough to read easily; brightness and contrast controls; adjustable height and tilt screen made with glare-proof surface; no visible flicker of characters
- If necessary, special glasses for VDT viewing distance
- Adjustable back rest to support small of the back
- Easily adjustable seat height and depth
- Swivel chair; safer with 5-point base and casters



to take rest pauses. Use the time to counterstretch.

A counterstretch is moving body parts in the opposite direction than they have been held. If you have to look to the left for a lengthy time, the counterstretch would be to look to your right.

Also, if you work with small parts, look away to allow your eyes to refocus at a distance.

Push instead of pull.

Pulling a load can put a lot of strain on your elbows, shoulders, and back. Rather than pulling, try pushing the load.

Use power equipment if it is available. If you need to move a cart, make sure its wheels are in good repair.

Try not to rest your body against sharp edges or subject it to sudden blows.

Putting pressure on a small area of your body can compress soft tissue structures such as tendons and nerves and may result in tissue damage.

Consider placing padding on sharp

edges, and never use your hands as hammers.

Build up gradually to the physical demands of work.

When you begin a task you have not performed before, it is important to work into the task slowly. Just like warm-up exercises before a physical workout, your body needs to adjust to the new physical demands.

Perform stretching exercises before beginning work and throughout the day.

Just as an athlete stretches before a game, you should stretch before you begin working at your job. When you perform these warm-up exercises, you are preparing your body for the physical work it will be doing.

A 5-minute set of exercises can be performed at the beginning of the shift and after lunch.

Copies of the Unit Safety Update may be obtained by writing to Commander, I Corps and Fort Lewis, ATTN: AFZH-SA, Fort Lewis, WA 98433-5000. For additional information, call Mr. Peter Strohm, Safety Director, I Corps and Fort Lewis, DSN 357-3079/commercial 206-967-3079. ♦

Computer health and safety

The fact sheet on page nine regarding a model VDT work station is reprinted courtesy of the Division of Safety and Hygiene, The Industrial Commission of Ohio. This information was derived in part from the Office Technology Education Project.

Too often computers are brought into the office and just plopped onto desks. They're just another piece of equipment, right?

Not exactly. Computers or video display terminals (VDTs) put unique demands on our eyes and muscles. Ergonomic equipment needs to be purchased and offices need to be changed to take this into account.

When people buy computers, they usually consider software and memory capacity (and forget about health and safety.) But a smart purchase will include features to prevent aches and injuries, and thereby increase productivity.

This fact sheet will help you figure out what features to look for when selecting equipment and what adjustments to make in your office layout, illumination, and furniture.

The illustration shows the proper VDT workstation design. Check to see if your workstation has these components. ♦

Safety messages

The following is a list of all ground precautionary messages (GPM) and maintenance advisory messages (MAM) issued by Army Tank-Automotive Command (TACOM) and Communications and Electronics Command (CECOM) for 4QFY97.

Tank-Automotive and Armaments Command (TACOM) Ground Precautionary Messages (GPM)

■ AMSTA-IM-O, 261802Z Sep 97, subject: Safety-of-Use Message (SOUM), TACOM-WRN Control No. 97-07, operational, M915 tractor (NSN 2320-01-028-4395), M915A1 tractor (NSN 2320-01-125-2640), M915A2 tractor (NSN 2320-01-272-5029), LIN T61103, XM 916 LET (NSN 2320-01-028-4396), M916A1 LET (NSN 2320-01-272-5028), M916A2 LET (NSN 2320-01-431-1163), LIN T91656, M920 MET (NSN 2320-01-028-4397), LIN T61171, M911 HET (NSN 2320-01-025-3733), LIN T61035. Summary: This message directs users not to use fifth wheel towing devices on any Army vehicle. These devices have not been tested and are not approved for use on any Army vehicle. Using this type of towing device on the subject vehicles improperly weights the axles and creates upward loading of the fifth wheel, which subsequently creates a potentially hazardous situation. POCs: Mr. Richard Justice, DSN 786-8495 (810-574-8495), Mr. Michael Decker, DSN 786-7517 (810-574-7517), or Mr. John Johnson, DSN 786-7505 (810-574-7505).

■ AMSTA-IM-O, 091354Z Jul 97, subject: GPM, TACOM-WRN Control No. 97-05, Crane 25-ton (NSN 3810-00-018-2021), P&H model MT250, LIN F43429; Crane 25-ton (NSN 3810-01-054-9779), grove model TMS 300-5, LIN F43429; Crane 20-ton rough terrain (NSN 3810-00-275-1167), P&H Model M320RT, LIN F39378. Summary: This message clarifies the actual requirements for load moment indicators (LMIs) on cranes and closes out the following two GPMs: TACOM-WRN Control No. 96-11, DTG 031238Z Sep 96 and TACOM-WRN Control No. 96-12, DTG 111902Z Oct 96. POCs: Mr. Jim Jump, DSN 786-8901 (810-574-8901) or Ms. Gwen Shaffer, DSN 786-7350 (810-574-7350).

■ AMSTA-IM-O, 111741Z Aug 97, subject: MAM, TACOM-WRN Control No. MAM-97-009, MLRS (NSNs 1055-01-092-0596, 1055-01-192-0357, 1055-01-192-0358, 1055-01-251-9756, and 1055-01-329-6826), Model M270, LIN L44894, cab hinge stud, cab hinge lock nut and cab hinge hold down washer nut installation. Summary: This message stresses the importance of proper

torque for the cab hinge stud, cab hinge lock nut and cab hinge hold down washer to prevent the MLRS cab from shifting on its hinges/mounts. POCs: Ms. Anne Marie Tolonen, AMSTA-IM-ABC, DSN 786-7345 (810-574-7345) or Ms. Kathy Miramonti, SFAE-GCSS-W-BV-L, DSN 786-8257 (810-574-8257).

■ AMSTA-IM-O, 291333Z Aug 97, subject: MAM, TACOM-WRN Control No. MAM-97-010, air induction system maintenance for Abrams tank systems, M1 (NSN 2350-01-061-2445), LIN T13374, IPM1 (NSN 2350-01-136-8738), LIN T13374, M1A1 (NSN 2350-01-087-1095), LIN T13168 and M1A2 (NSN 2350-01-328-5964), LIN T13305 (not applicable to those M1A2s equipped with the pulse jet system (PJS)). Summary: This message provides specific changes to the PMCS for the air induction system for the subject tanks. These changes will be published in the appropriate TMs NLT November 1997. POCs: Mr. Brad Voss, AMSTA-IM-AAH, DSN 786-6049 (810-574-6049) or Mr. Edward Feeley, SFAE-GCSS-W-AB-LD, DSN 786-6846 (810-574-6846).

Communications and Electronics Command Ground Precautionary Messages (GPM)

■ AMSEL-SF-SEP, subject: GPM 97-011, Power cable mismatch electrical hazard with AN/UXC-7 cable (NSN 5995-01-090-6101) and PP-6224 cable (NSN 5995-00-135-4555). Remarks: Mixing the subject cables can energize the equipment casing. Cable verification procedures are provided. Status: Closed. POC: Mr. Joe Cocco, DSN 992-9723, ext. 6436.

■ AMSEL-SF-SEP, subject: GPM 97-012, BB-490/U, Battery storage (NSN 6140-01-331-4013) and related items. Remarks: Substituting the BB-390/A battery for the subject battery will cause permanent damage to the battery and possible damage to the equipment battery/charger user actions are provided. Status: Open. Message will remain open until the link between the BB-490 and the BB-390 is implemented. POC: Mr. Klimek, DSN 987-3112, ext. 6437.

■ AMSEL-SF-SEP, subject: GPM-97-013, BA-5800/U (NSN 6665-99-760-9742) Lithium sulfur

dioxide batteries. Remarks: Recent violent ventings occurred because of improper battery usage or disposal processing. User actions are provided. Status: Open. POC: Mr. David Kiernan, DSN 992-0084, ext. 6447.

■ AMSEL-SF-SEC, subject: GPM-97-014, Generator set, diesel, 2KW 120V AC

manufactured by Mechtron, MEO-531A, LIN Z31804 (NSN 6115-21-912-0393). Remarks: The generator's duplex convenience receptacle is not equipped with a ground fault circuit interrupter which protects users from electrical shock. User actions are provided. Status: Open. POC: Dr. Gaines Ho, DSN 654-2093. ♦

FIRE!

Now that I have your attention, Countermeasure needs your help. We need your input to help us meet readership demands. Our No. 1 reader request is for more stories and lessons learned, but it sure is hard to print information that we don't have.

No one can give a better first-person account of an event than the individual involved. Tell us about your close calls, near misses, and the safety lessons you learned from the experience. If you want your story to be anonymous, we'll do it that way.

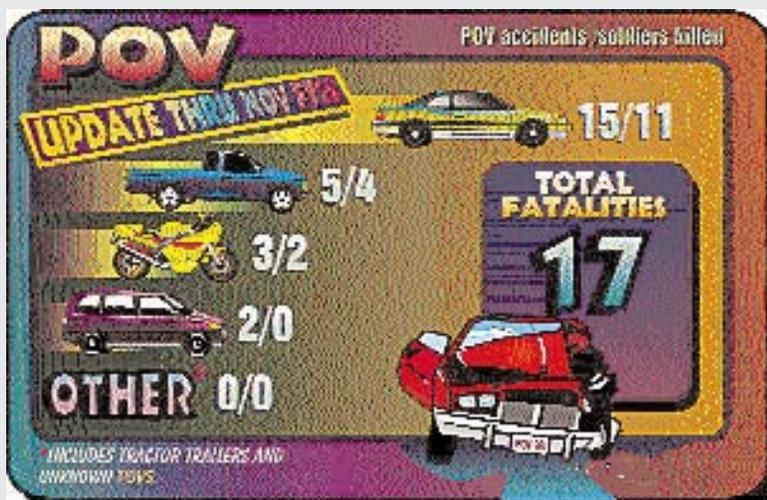
Don't have any "war stories" to tell? Then tell us about the good things that are happening as a result of your safety programs. What are you doing in your unit to lower accident rates? What are you doing to spread safety awareness? Has your unit or soldiers within your unit won any safety awards? Accident rates across the Army are down, so obviously something good is going on out there. Tell us about it.

We also get lots of requests for posters. This is another area where you can help; if you have poster ideas, please let us hear from you.

To keep Countermeasure customer-focused, we need your expertise and input. Let's form a partnership, and together we can develop informative, up-to-date articles (posters too) on both old and new safety issues.

Send your written material or even a cassette tape (if you absolutely hate to write) to Commander, U.S. Army Safety Center, ATTN: CSSC-OSA-G (Countermeasure), Building 4905, 5th Avenue, Fort Rucker, AL 36362-5363. If you prefer, you may FAX the information to the attention of Ms. Paula Allman at DSN 558-9528 (334-255-9528), or send it by e-mail to allmanp@safety-emh1.army.mil.

Be sure to include your telephone number, FAX number, mailing address, or an e-mail address where we can contact you. ♦



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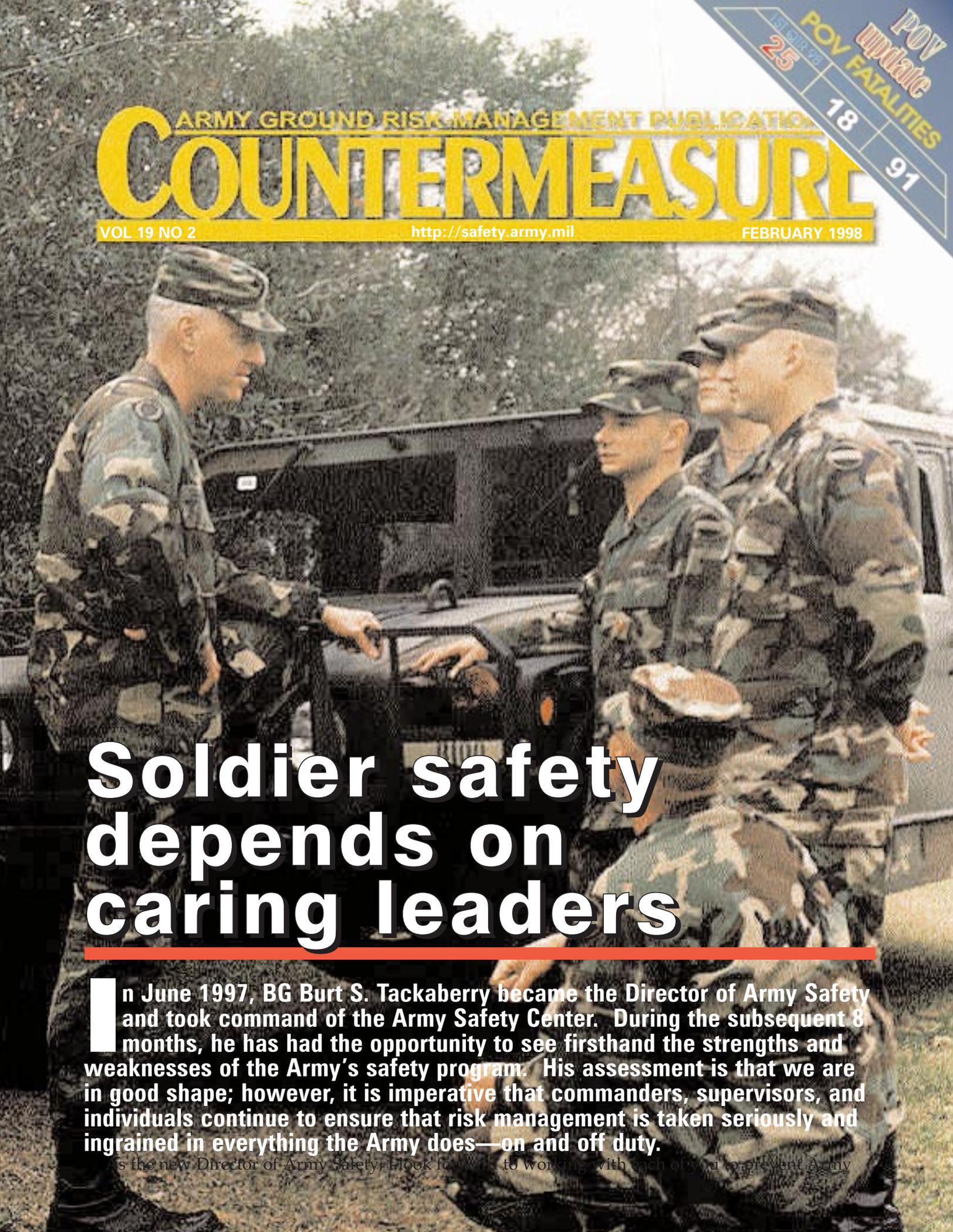
Burt S. Tackaberry
Brigadier General, USA
Commanding

POV update
POV FATALITIES
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ARMY GROUND RISK MANAGEMENT PUBLICATION

COUNTERMEASURE

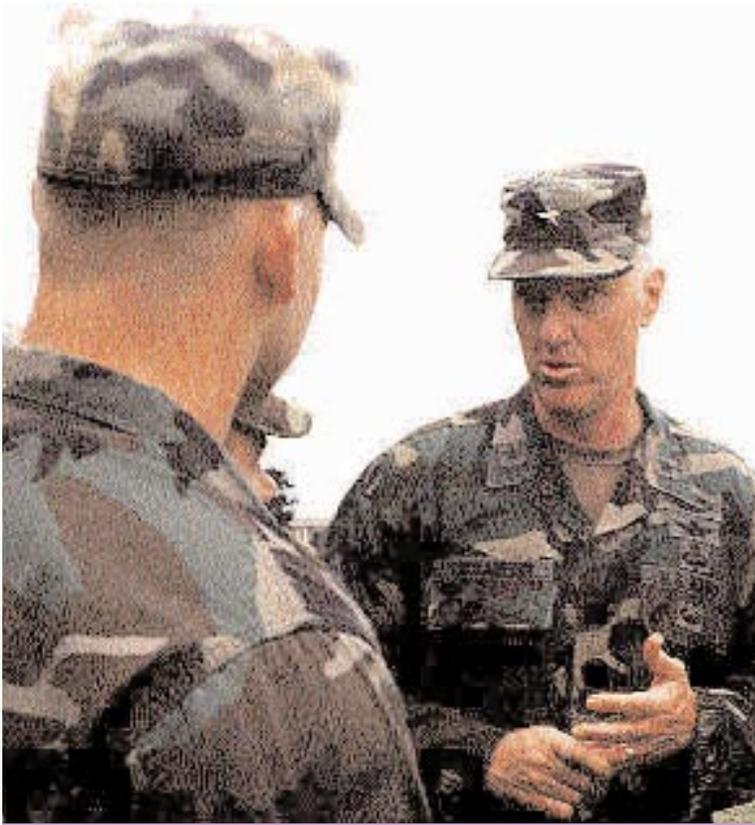
VOL 19 NO 2 <http://safety.army.mil> FEBRUARY 1998



Soldier safety depends on caring leaders

In June 1997, BG Burt S. Tackaberry became the Director of Army Safety and took command of the Army Safety Center. During the subsequent 8 months, he has had the opportunity to see firsthand the strengths and weaknesses of the Army's safety program. His assessment is that we are in good shape; however, it is imperative that commanders, supervisors, and individuals continue to ensure that risk management is taken seriously and ingrained in everything the Army does—on and off duty.

As the new Director of Army Safety, I look forward to working with each of you to prevent Army



“A good leader identifies the necessary standards and gets his or her soldiers to understand and maintain those standards. At the same time, a good, caring leader creates a climate of caring leadership in which soldiers protect one another by taking action to prevent accidents. This type of environment starts at the top and must filter down throughout the entire organization.”

accidents. Of course, I am talking about all aspects of safety – ground, aviation, and weapons. I am impressed by the effectiveness of the Army’s overall safety programs. It is commander business, and they do it well. All of us – in the units, at the installations, in the MACOMs, and at the Safety Center are proud of our safety record. The last three fiscal years, FYs 95, 96, and 97, were the Army’s best years on record. We have to be proud of that record and know that the tremendous efforts under way within our Army safety programs are working. Therefore, my challenge is to keep up the momentum of things that have been working and continue to look for new ways to protect our force.

I believe it is simply soldiers caring about soldiers and getting personally involved in their safety and welfare. It is individual soldiers caring enough about their own professional performance and the performance of other members of their unit to protect themselves and their fellow soldiers. It is leaders caring enough to get directly involved to fix accountability, tighten supervision, and set high standards of performance.

A Word to Leaders

The heart of the Army is its people, and we cannot afford the tragic loss of even one soldier. Leaders must be involved in continuously evaluating the status of safety programs and control measures as well as the experience level of assigned personnel. Managing inherent risks and mitigating hazards must be the primary concern in all that the unit does and factored into all mission-related tasks.

I have always said that if you are in a good unit, you train well, train hard, maintain hard, do it safely, and care for soldiers. And if you truly care for soldiers, they will put 100 percent back into the unit. And that 100 percent will manifest itself in the quality maintenance of the aircraft or the vehicles, and soldiers will do their job safely. It’s a sort of reciprocal do-loop. You can see that in many organizations in the Army – ground units or aviation units, or any units that have an excellent safety track record.

A good leader identifies the necessary standards and gets his or her soldiers to

understand and maintain those standards. At the same time, a good, caring leader creates a climate of caring leadership in which soldiers protect one another by taking action to prevent accidents. This type of environment starts at the top and must filter down throughout the entire organization.

Be alert! Awareness of an unsafe practice or attitude is the first step in preventing an accident. But awareness alone is not enough.

Someone must care.

Leaders must care enough to step in and take action before the accident happens. Because every time he does not correct a situation that is dangerous or wrong, he has just set a new standard. That is why establishing standards, ensuring everyone knows and understands the standards, and then enforcing those standards are very, very important. If you ingrain risk management into the soldiers, then when there is no leadership present, soldiers will do the right thing. They are going to look at a situation, look at what is required, and use the risk management process of identifying hazards and implementing controls.

Your soldiers want to do well, and I use this as an example: It is three in the morning, pouring down rain, freezing cold, they will put the refuel point in, and they will do it right and do it safely. Without caring leadership—it is three in the morning, pouring down rain, freezing cold, and the refuel point will not get in or if it does, it will not be safe or done professionally. So, genuine caring leadership goes a long way.

Caring is a two-way street. If leaders take care of their soldiers, soldiers will return that care by exhibiting loyalty to the unit, personal discipline to standards, and loyalty to and concern for their peers. It is absolutely true. Subordinates take care of you more than you think. They take care of you in safety, they take care of you in speaking well of the unit, and they take care of you by not letting other soldiers do dumb things; they give more than a leader can

ever give back.

That's the thing about it: If you treat them well, lead them well and fairly, then they are going to produce for you.

Protect the Force Through Safety

Protecting the force is working! The Army has a great safety program. We are doing a magnificent job! Because of quality leadership, the Army was able to reduce the number of

fatalities from 194 in FY 96 to 146 in FY 97. We will not be satisfied until not a single soldier dies in an accident that could have been prevented.

Privately owned vehicle (POV) accidents are a major concern for Army leadership. Privately owned vehicle accidents are the number one killer of our soldiers. Just in POV accidents alone, we are losing almost an infantry company a year. Ninety-one of the 146 soldiers killed last year died in POV accidents.

Personnel injuries are the second leading killer of soldiers. In accidents that injure people,

personnel injuries are number one. The types of accidents that are hurting people: combat soldiering, which is tactical parachuting, infiltration/assault, or patrolling; sports, with basketball having the most accidents; and slips, trips, and falls registering third.

We have done well with our Army combat vehicles (tracked vehicles). There were 49 accidents in FY 97. We have a great record in the armor community and there are several reasons why in my opinion. One, when they take tracks out, they go out as units with leaders involved and present. On the other hand, our Army motor vehicles (wheeled vehicles), most often move out by themselves, not in formation, and without supervision. This means that before they leave the motor pool and go out on a mission, soldiers must be thoroughly, completely briefed on what they can and cannot do.

I understand we all operate in a high-otempo environment and our plates are full in a resource-constrained Army. That is the world

I want to bring this to your attention: We have recently experienced a rise in fatal POV accidents. I urge you to watch this area closely and continue to press for safe driving practices.

**—BG Burt S. Tackaberry
CG, U.S. Army Safety Center**

we live in, that is the Army way. I fully believe that as we continue to make our Army safer, we must institutionalize the risk-management process to the point that it becomes second nature. Only then will our Army be a safer place for our soldiers to live and work.

Risk Management

Meticulous attention to detail is imperative, and safety is a 24-hour-a-day state of mind. If young soldiers are taught risk management, the unnecessary loss of life will be reduced. Risk management must be instilled initially through repetition until it becomes instinctive and intuitive.

Our goal is to make risk management a routine part of planning and executing operational missions. The most important element is the sharing of

information. It is vital at every level of command, from Private to General. Using dialogue with the field is the proactive approach to safety. TALK!

The Safety Center tries very hard to get the information out to the field, so we can help commanders make a better, more-informed decision. What I mean by that is the Safety Center has tremendous accident data from the entire Army population. Fort Knox may not know about the accidents that are happening at Fort Sill or other installations. We need to share that information, identifying systemic problems so the Army can identify specific operational risks and take measures to reduce or eliminate those risks. Soldiers can learn from the errors that other individuals have encountered and recognize and control the hazards in the future.

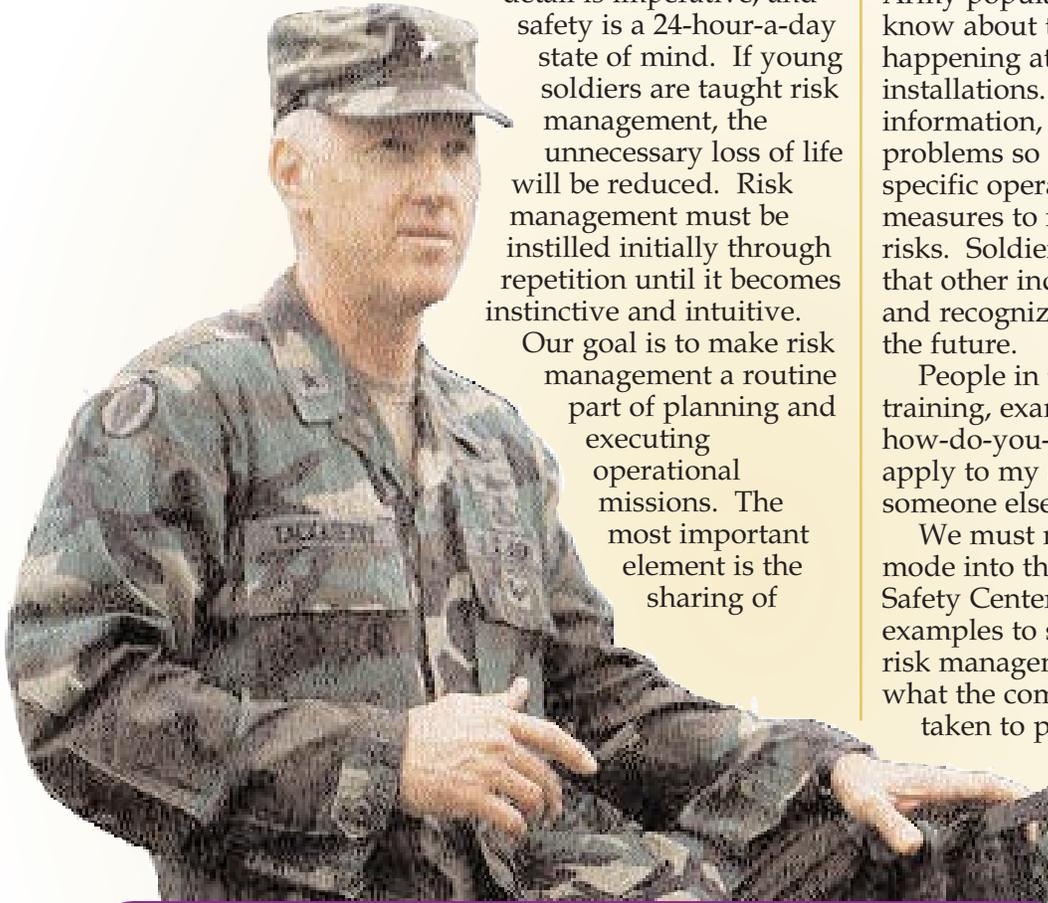
People in the field are asking for training, examples, briefings, books on how-do-you-do-this stuff, how does it apply to my situation, and where has someone else done it successfully?

We must move from the reactive mode into the proactive mode. The Safety Center is developing proactive examples to show situations in which risk management was used successfully, what the commander ran into, actions taken to prevent an accident, and the

results. We must get soldiers thinking about what can go wrong and what actions should be taken to control the risk — anticipation of problems — that is risk management.

One Army—Same Standards

Tough caring is standard-making and enforcing those standards. Enforcement of standards develops discipline in the unit and in the soldiers, and disciplined soldiers are safe soldiers. The key to



Risk management pointer

- Identify hazards
- Assess risk of each hazard
- Make risk decisions and develop controls
- Implement controls
- Supervise (monitor/enforce controls)

disciplined soldiers is for leaders to take an interest and take action against violations of established procedures and disregard for safe practices. Leaders must show that they will not tolerate a violation. Eliminate the “that’s the way we’ve always done it” mentality and get back to doing things right—to Army standards.

Leaders must talk standards. There are standards in training, there are standards in physical fitness, there are standards in the motor pool, and there are standards in safety. To have a proactive safety program, leaders must set clear, concise standards and enforce those standards. Standardization is proactive safety.

I have a saying: Don’t lower the bar, set it higher. It’s called standards. If

you throw a rope up on a hill and put five people on it, there is a tendency for them to all pull down, they will never pull up. One might try to pull up, but the other four will pull that one who wants to raise the standards back to the status quo. Good leaders, through caring leadership, can change a unit so they will all pull in the same direction.

Training to standard produces skilled, disciplined soldiers. And skilled, disciplined soldiers are professional soldiers who accept responsibility for the safety of themselves, the safety of others, and the protection of Army equipment. Soldier safety depends on caring leaders. It is everyone’s responsibility. ♦

Keeping safety on track

Safety continues to be an area of concern throughout the Army. Significant progress was made in FY 97. To continue on this course, FY 98 will require the dedicated efforts of all members of the Army team.

To accomplish this feat, we must continue our initiatives to integrate risk management into everything that we do by practicing risk-management techniques until they become intuitive, and accepting responsibility for our actions or lack thereof. Doing so will provide us with the best chance of keeping safety on the right track as we face the tough challenges ahead in FY 98.

To assist us in effectively communicating to our readers, we would like to publish a brief synopsis of successful safety programs or commendable ideas and techniques for helping plan and implement an effective and efficient safety program. This information could be useful during command and staff meetings or any other meetings where safety issues may be discussed.

Speak up and tell us about experiences, good-news stories, and good ideas that are working in the units. If we use the recommendations/lessons learned in a



Countermeasure article, we will send the individual a “Safety Center Coin” with his or her name engraved.

Send written material to Commander, U.S. Army Safety Center, ATTN: CSSC-OSA-G (Countermeasure), Bldg. 4905, 5th Avenue, Fort Rucker, AL 36362-5363. FAX the information to the attention of Ms. Paula Allman at DSN 558-9528 (334-255-9528), or send it by e-mail to allmanp@safety-emh1.army.mil.

Be sure to include your full name, telephone number, FAX number, mailing address, or an e-mail address. ♦

Once in a Lifetime Jump

The jumpmaster continued: “..... You will then go into your third point of performance which is ‘Keep a sharp lookout for all jumpers during your entire descent!’ Remember the three rules of the air: Always look before you turn, always turn right to avoid collisions; and the lower jumper always has the right-of-way. Avoid all jumpers by maintaining at least a 50-foot separation all the way to the ground. At the end of your third point of performance, release all appropriate equipment tie-downs.”

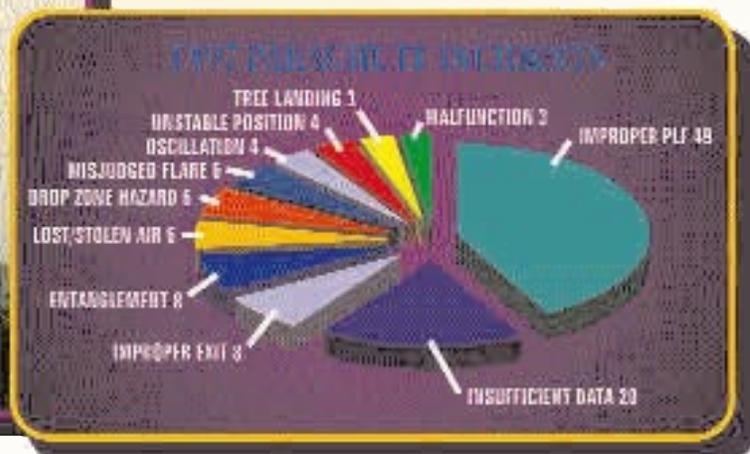
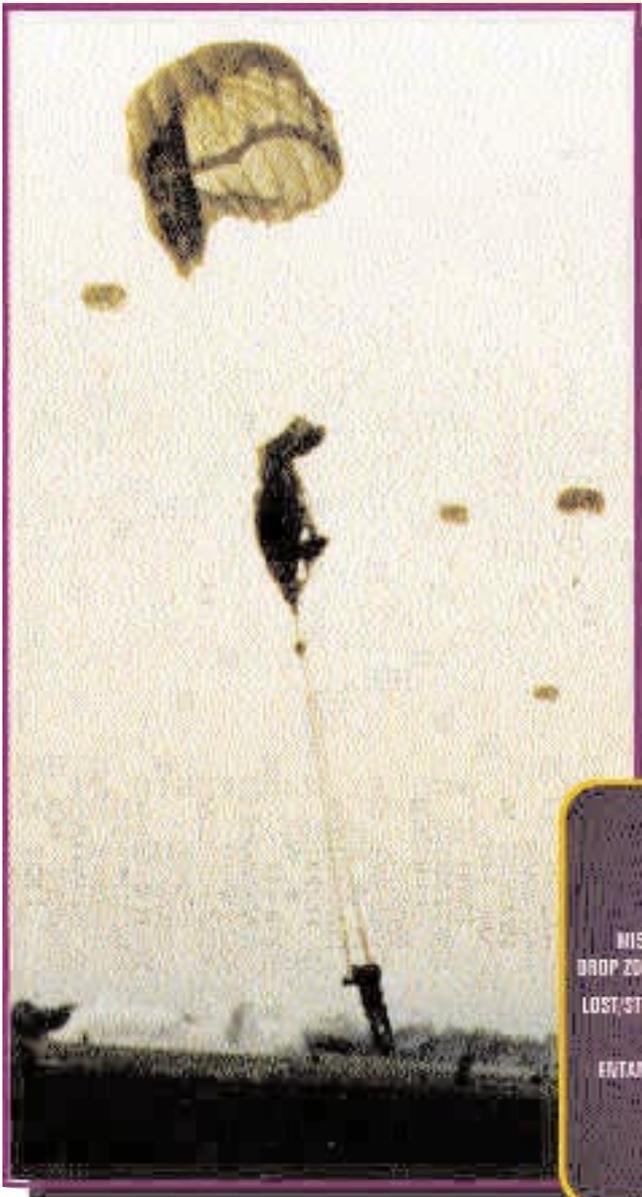
How many times have we heard the jumpmaster’s pre-jump brief? Tens, hundreds, maybe thousands? Since virtually “day one” at Airborne School, we have heard this standard brief over and over again. Most paratroopers have

unconsciously memorized the whole pre-jump routine whether they tried to or not. They have heard it so many times that they sometimes tune it out.

It’s like the businessman who travels on planes for a living. Does he watch and listen as the flight attendant goes through the pre-takeoff safety brief? Most likely not. He has seen and heard this brief many times over.

But that one fateful day when something goes terribly wrong, will he remember what he has tuned out for so long? Will he actually be able to carry out the actions that he has been instructed to do a hundred times over? Or will he freeze-up in a state of panic and fail to take the proper measures? Will he do it instinctively? Will he react out of fear? Will he do it as a result of extensive training? Will he do it because it makes common sense? Or will he fail to do it because he was overconfident in his ability and die because of it?

For example, during a daylight combat equipment jump, a paratrooper was fatally injured when he failed to properly execute his third point of performance by not keeping a sharp lookout



during his decent. Additionally, he did not follow the rules of the air and slip away from another jumper, nor did he maintain the proper separation; consequently, he floated directly above the other jumper's chute and lost his air. As he passed that jumper, he remained unresponsive. He failed to realize that he was falling faster than the other jumpers, and therefore didn't perform the proper emergency procedure of activating his reserve parachute.

Accidents and incidents will occur. Airborne operations are inherently dangerous operations and should be given the attention and respect they deserve. A high-altitude entanglement is the wrong time to question one's knowledge and/or ability to recover. What seemed like a mundane and repetitive pre-jump brief turned into the most important thing this paratrooper should have listened to.

In the past five years, there have been 1162 reported incidents involving tactical parachuting operations. In FY 97, there were 116 incidents of which 7 percent resulted in entanglements; 5 percent resulted in lost or stolen air; and 3 percent resulted from a parachute malfunction.

There have been 49 fatalities as the result of parachute operations since 1986, five of those occurred during 1997. How many of these incidents could have been avoided? Probably all of them.

Entanglements, lost air, and malfunctions happen. They are infrequent mishaps, but none-the-less, they happen. There are as many reasons these events take place as there are reasons they should not.

As repetitious as a pre-jump brief can seem, it serves a valuable purpose. That purpose is to save lives by ensuring all jumpers can execute all emergency procedures in all emergency situations. This is accomplished through repetition and jumpmasters enforcing standards throughout sustained airborne training. If not, the next jump could have a lasting impact! ♦

POC: CPT(P) Gary J. Kotouch, U.S. Army Safety Center, DSN 558-1218, e-mail kotouchg@safety-emh1.army.mil

“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

Watch your fingers!

There has been a significant increase in the number of accidents where a soldier has lost a finger, or the joint of a finger has been crushed or severed. Most of these accidents were caused on duty when a soldier's ring got caught on work equipment. At least monthly, on average, a soldier loses a finger while wearing a ring on duty. This is a compelling reason to leave the ring at home, especially if you work around hazardous equipment.

Eighty percent of all accidents occur as the result of human error. There are five major reasons for human error. They are leader failure, individual failure, training failure, standards failure, and support failure.

These accidents are shocking both for the quickness and ease with which they happen, as well as the severity of the consequences:

☞ An accident in the motor pool bay left

a soldier's arm broken in two places and his right hand index finger severed. The soldier disregarded specific instructions from his supervisor to get assistance before performing -10 level maintenance on the winch of an M35A2 truck. Instead, the soldier elected to do the service alone and in an unauthorized area. While standing at the front of the truck and manually controlling the winch, the rag the soldier was using to grease the winch cable became caught and his right arm was pulled into the winch.

Analysis:

- Leader failed to supervise the soldier and enforce prescribed standards. Emphasis should be placed on explicit communications that direct actions between leaders and soldiers, and the risks involved.

- Individual failed to follow supervisor's instructions and prescribed technical manual procedures on operating hazardous equipment.

- Training failure suggests that soldier did not receive proper training and/or enough risk management training before he got involved in winch operations. Technical Manual 9-2320-361-10, Operator's Manual for 2-½ Ton Series Trucks, is devoted to safety precautions for the M35 series 2-½ ton trucks.

☞ A soldier's index finger was severed and his middle finger crushed when he and another soldier were attempting to hook a ¼-ton trailer to another vehicle. Upon release of the roll stand, the tongue weight of the trailer fell on the pintle of the hitch, catching the



Keeping soldiers from getting disfiguring injuries and losing fingers and hands require leaders to enforce standards for each task. The payoff is healthy soldiers who are available for duty with all of their original body parts intact.

accident soldier's right hand. The tongue weight exceeded the two soldiers' lift capabilities.

Analysis:

- Leader failed to supervise his soldiers and enforce prescribed standards.
- Individual failure suggests that soldiers did not cite reference manuals to ensure job was performed to standards. Proper use of the technical manual would have pointed out a couple of safety violations in this operation. One, insufficient number of personnel were on hand to lift and maintain the weight of the trailer; and two, if the TM had been referenced, correct operating procedures could have prevented this soldier's permanent disability.
- Training failure implies soldiers were not trained to known standards (either the training was insufficient, incorrect, or not existing for that task).

In the following illustrations, soldiers lost fingers while moving quickly from one place to another:

☞ Retrieving his crewman's helmet, a soldier climbed down from an Avenger weapon system and got his wedding band caught on an undetermined part of the vehicle. The flesh and tendons were stripped from his finger; consequently, his finger was amputated due to the severity of the injury.

☞ A soldier lost his finger while dismounting a cargo HEMTT. Soldier was unloading ammunition when his wedding ring got caught on the vehicle.

His left ring finger was pulled off by the weight of his body and was too badly damaged to be reattached.

Analysis:

Most technical manuals carry warning statements which warn soldiers to remove all rings, bracelets, wristwatches, and neck chains before working around vehicles. Jewelry can catch on equipment and cause injury, or may short across an electrical circuit and cause severe burns or electrical shock. Commanders may prohibit soldiers from wearing jewelry while performing hazardous jobs, and other leaders should encourage soldiers not to wear rings or other jewelry around equipment.

- Leaders must ensure that standards exist within the unit, ensure soldiers know the standards, and enforce those standards at all times.
- Soldiers should be reminded of the importance of carefully following prescribed procedures when operating hazardous equipment.
- Training to standard is imperative. Leaders must demand discipline by-the-book performance and permit no shortcuts.

Risk management is not just a leader's responsibility, it is everyone's responsibility. It could save soldiers' fingers.

POC: SFC Erwin Bailey, AR, Combat Arms System, Ground Tactical Branch; DSN 558-2908 (334-255-2908)

Help for the first-line leader

Enforcement is the supervisor's first line of defense in safe operations. You – the first-line supervisor, the squad leader, the platoon sergeant, the section sergeant, or the NCOIC – must insist that safety be part of the soldier's everyday life.

When you have your daily squad or section meeting, let your soldiers know the safety hazards associated with the tasks they'll be doing that day and what safety precautions

they need to take. Inspect your soldiers before they start a task to ensure they're wearing all the required equipment needed for that job. Make sure you personally know that a soldier knows how to operate equipment or a motor vehicle to standard before tasking him to use it. And above all, be sure your soldiers are fully trained to standard and that you enforce that standard – every time. ♦

Static advisory

Extended cold weather clothing system (ECWCS)

Soldiers conducting static-sensitive operations need to be aware of possible static discharge from the ECWCS parka, NSN 8415-01-228-1306 (series) and trousers, NSN 8415-01-228-1336 (series).

These outer garments of the ECWCS are made of a synthetic laminated cloth (commonly known as Gore-Tex®). These synthetic materials can develop a static electric charge that does not readily dissipate. Synthetic fabrics generally develop greater static charges and maintain these charges for a longer period than natural fibers such as cotton or wool.

Electrostatic discharge (ESD) during operations such as ammunition or missile handling, fuel dispensing and refueling, and maintenance of electronics may present an immediate operator

hazard or have a delayed adverse effect upon systems.

Units should identify operations where ESD can be a hazard and implement controls to reduce or eliminate these hazards. References that specify established procedures include, but are not limited to, the following:

■ **FM 10-68:** *Aircraft Refueling.*

■ **FM 10-69:** *Petroleum Supply Point Equipment and Operations.*

■ **FM 10-20:** *Organizational Maintenance of Military Petroleum Pipelines, Tanks, and Related Equipment.*

■ **FM 9-38:** *Conventional Ammo Unit Operations.*

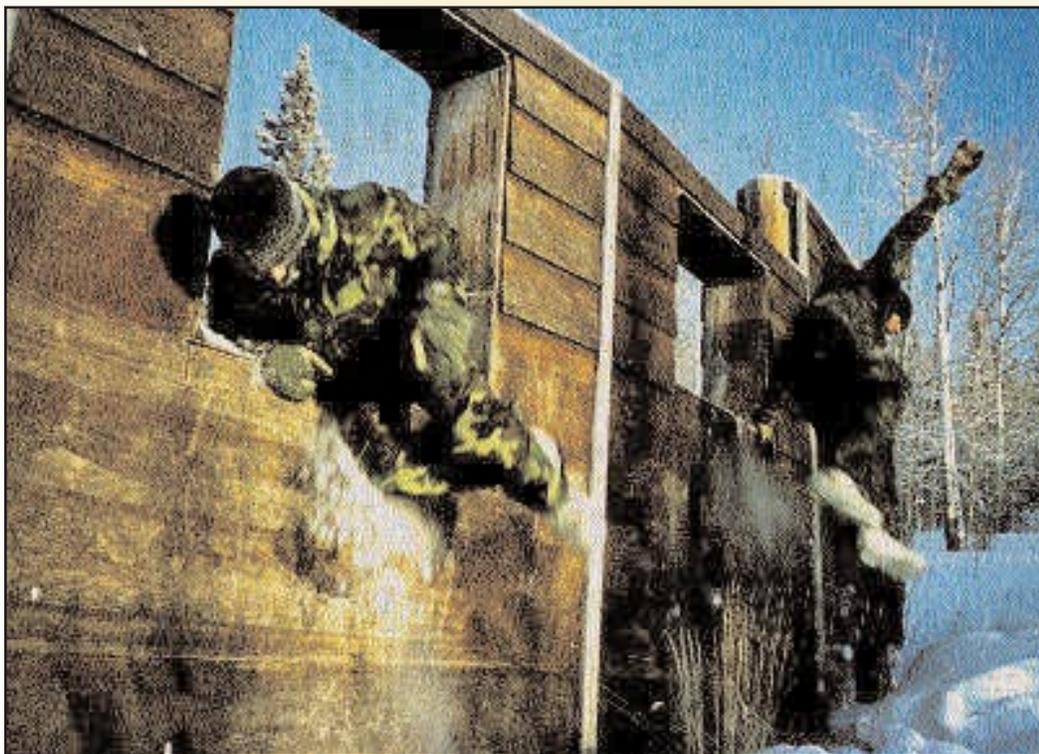
Fortunately, no incidents have been attributed to ESD from field clothing, however, units should ensure normal engineering controls, such as grounding, bonding, and ventilation of fuel/air

mixtures are part of their standing operating procedures for static-sensitive operations.

Points of contact

■ **Technical** – Mr. Neil E. Smedstad, U.S. Army Natick Research Development and Engineering Center, DSN 256-4032 (508-233-4032).

■ **Safety** – Mr. Paul G. Angelis, U.S. Army Natick Research Development and Engineering Center, DSN 256-5208 (508-233-5208). ♦



Soldiers train wearing ECWCS clothing that develop static electrical charges. These static charges do not readily dissipate and may present hazards during training.

If you aren't wearing a seatbelt—

What's holding you back?

Research shows there is less chance of death and injury to the occupants of a car involved in an accident if (1) the occupants remain in the car (a person is 25 times more likely to be killed if thrown out of the car), and (2) they are kept from bouncing around inside the car. The restraint system—a seatbelt and shoulder harness—is designed to do both of these. Restraint systems do their job so well that they save thousands of lives and injuries each year. And even more deaths could be prevented if every person would use them.

Although some people are thrown clear in a crash and luckily walk away with little more than a few scratches, these are exceptional cases. Accident statistics show that thousands of deaths and serious injuries occur because unrestrained occupants are thrown out of their vehicles. Some of these people are killed or injured on impact with the ground or some other obstacle. Others are dragged or run over by another vehicle. Some are run over or crushed by their own car. In all but extreme cases, restraint systems could prevent these injuries.

Other facts point out the need to use the restraint system when driving locally as well as when on the highway. Statistics show that about 75 percent of all vehicle accidents happen within 25 miles of the occupants' homes. Of course, this does not mean you are safer driving along a highway than when driving locally. What these statistics point out is that most daily driving is done near one's home; so, three times as many accidents occur locally as in remote areas. In 80 percent of those local accidents that produce deaths or injuries, the impact speeds are under 40 mph. This means high speeds are not needed

for deaths and injuries to occur. Since accidents are more likely near the driver's home, it is just as important to use the restraint system when driving around town as it is on the highway. The only way to gain full benefit from restraint systems is to make a habit of using them on every trip.

Now we come to a common argument against using restraint systems: "I don't like the idea of being buckled up and trapped if the car should catch fire or go into water."

In only about 1 percent of all accidents do either of these conditions occur. But even if the car catches fire or goes into water, the first requirement for escape is to be conscious. Any impact that produces fire or dumps a car into water is going to be a severe one. Without the use of restraint systems, occupants are going to be thrown around inside the vehicle. The chance of being knocked unconscious is a real one.

Over a lifetime, a person has more than a 50/50 chance of being injured in a car accident. There are many things that can be done to reduce that risk. Driving defensively and cautiously, not driving while under the influence of alcohol and drugs, and keeping your car in peak condition are three important steps. None of these, however, will guarantee that a person will not have an accident.

Good drivers have accidents too, sometimes because they are hit by drinking or drugged drivers or other poor drivers, and sometimes because they make an error. Nobody is immune to accidents and no one can control all of the factors involved in a traffic accident. But there is a simple and effective way of cutting the risk of being injured by more than half—wear restraint systems!

What's holding you back? ♦

Incoming

Safety Center personnel have been retiring and PCSing at an astonishing rate this year, and that means we have a lot of new folks on board.

In our continuing efforts to keep Countermeasure relevant to your needs and interests, we ask you to contact our professional staff if you have questions, ideas, or comments. Please let us know how we can help you. We truly want to know how we can serve you better.

New ground tactical subject matter experts, their branches, and their phone numbers are listed below. DSN is 558-xxxx; commercial is 334-255-xxxx.

- LTC Peter Simmons, Chief, Ground

Systems, 2926

- MAJ Julian Simerly, Wheeled Vehicles/ Weapons, 1186

- MAJ Monroe Harden, Heavy Tracked Vehicles, 9863

- CPT(P) Gary Kotouch, Light Tracks/ Airborne, 1218

- MSG Ernest Dobereiner, Infantry, 2959

- SFC Erwin Bailey, Armor, 2908

- SFC Charles Olsen, Engineer, 3034

- SFC Charlotte Underwood, Chemical, 2913

- SFC Clarence Welch, Field Artillery/ Airborne, 2892

- Mr. Don Wren, Safety Engineer, 9864

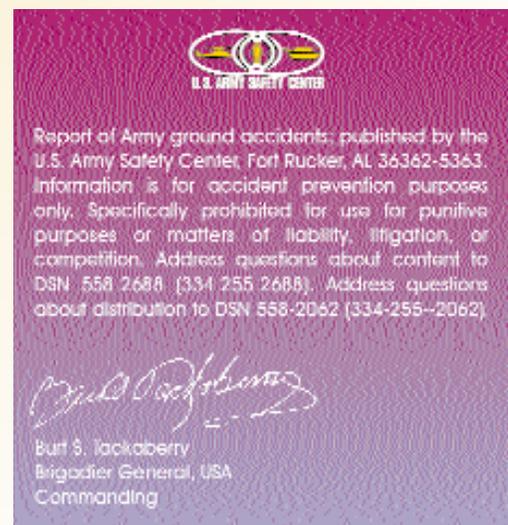
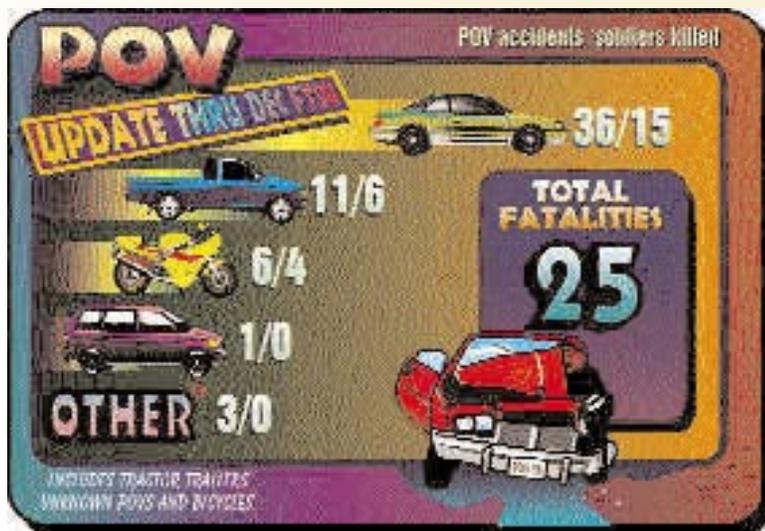
- Ms. Paula Allman, Writer-Editor, 2688 ♦

Note to the field

In looking at Countermeasure's distribution list recently, we noticed some installations were receiving more issues than they had soldiers. We've updated the list to take care of such problems. If your unit gets fewer copies than you need, let us know. We'll be glad to add to the list those who truly need to receive Countermeasure. Also, local reproduction is both authorized and encouraged.

In addition, if you have electronic transmission capability, Countermeasure is now on the Internet, so users have yet another way of receiving this publication (<http://safety.army.mil>).

For distribution questions, call Ms. Sharrel Forehand, Media Management and Production Division, at DSN 558-2062 or 334-255-2062. Email is: forehans@safety-emh1.army.mil. ♦



ARMY GROUND RISK-MANAGEMENT PUBLICATION

COUNTERMEASURE

VOL 19 NO 3

<http://safety.army.mil>

MARCH 1998

POV update
POV FATALITIES
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Speed—a risky business

During the last three fiscal years, a total of 92 soldiers were killed and 17 suffered permanent disability injuries in privately owned vehicle (POV) accidents.

It's easy to speed, and drivers often try to justify it. "I'm running late." "I'm

driving the same speed as everyone else." "The speed I'm driving isn't that dangerous." "I'm a good driver. I'm in control."

These are poor excuses for a bad habit. Speeding is a major factor in approximately 30 percent of all fatal traffic accidents.



Privately owned vehicle (POV) accidents are taking too many of our soldiers' lives. The results show that we do a great job emphasizing POV safety before key national holidays. Let's go the extra mile to ensure that we emphasize safe driving all year 'round.

—BG Burt S. Tackaberry, CG, U.S. Army Safety Center

SLOW DOWN!

When you speed, you take unnecessary risks: the risk of having to repair or replace a wrecked vehicle; the risk of increased auto insurance rates; the risk of points against your driver's license; and the risk of being unable to stop quick enough to avoid hitting a pedestrian, bicyclist, or road debris—not to mention the risk of injuring or killing yourself, loved ones or others.

You should drive at speeds appropriate to road conditions and the posted speed limit. In bad weather (such as rain, fog, or snow) and under other hazardous road conditions (such as construction zones and accident sites), the safest speed may actually be less than the posted speed.

Speed limits are not set to give police a reason to write traffic tickets. They are the maximum safe speed for that section of road, based on the road surface, number of accidents, and traffic patterns.

The faster you drive, the less time you have to stop suddenly or swerve quickly. Your car's occupant-protection equipment is less effective in a high-speed collision, resulting in more damage to life and property.

There are certain times of the day and conditions that heighten a driver's risk for an accident, especially when speeding:

Night driving. Sixty percent of all speed-related fatal accidents occur between 6 p.m. and 6 a.m., even though fewer vehicles are on the road. Part of the reason is that speeding cuts the effectiveness of a vehicle's headlights. Low-beam headlights illuminate 160 feet of space in front of a moving vehicle. At some speeds, a driver may not have enough time and space to spot an object or hazard in the road, react to the situation, apply the brakes, and stop. The situation is even more risky in rain, fog or snow, or when a driver is drinking, taking drugs, or is tired.

Drowsiness. Driving drowsy is most likely to occur at times when people usually sleep—between midnight and 7 a.m.—and in mid-afternoon. Some drowsy drivers tend to have difficulty maintaining a constant speed and often drive faster so that they will get to their destination sooner. Driving drowsy is most likely to occur when driving alone or when taking long or monotonous trips.

Also, being alcohol-or drug-impaired increases a driver's risk of falling asleep at the wheel.

Wet Roads. Rain, snow or ice-covered roads can greatly diminish a car's traction, making it harder to switch lanes, turn or stop. Speeding compounds such dangers and makes even basic driving maneuvers risky. For instance, a car traveling at 40 mph in the rain needs almost twice as much distance to stop as it does on a dry road. Drivers should also be aware that roads are slickest when it first starts to rain because accumulated dirt and oil on the pavement combine with the water on the road's surface. A moving vehicle can easily hydroplane or "float" on this thin film of water instead of riding on the road itself, resulting in total loss of control.

Speeding drivers are also likely to be aggressive drivers, prone to running stop signs and red lights, weaving in and out of traffic, passing on the right, and making improper and unsafe lane changes. They also make hand and facial gestures, scream, honk, and flash their lights. Aggressive drivers have high levels of frustration and low levels of concern for fellow motorists. It is important not to challenge aggressive drivers, return gestures, or react in kind. If possible, get a license number and report any incidents to police.

Accidents are disproportionate on rural roads, which account for 40 percent for all vehicle miles traveled and more than 60 percent of all speed-related crashes. While these roads may not be heavily traveled (and many two-lane rural highways have a 55-mph speed limit), they usually aren't engineered to accommodate vehicles traveling at higher speeds.

Speeding costs society a bundle—billions of dollars every year. This includes costs for hospital care, property damage, and insurance premiums.

Speeding is not an affordable risk and is not worth the consequences. Slow down, and reduce your chances of having an accident, reduce the damage if an incident does happen, and avoid costly tickets and insurance rates.

—Adapted from the National Highway Traffic Safety Administration

Chief of Staff, Army, states concerns

The following is reprinted from a message to the field from General Dennis J. Reimer, Army Chief of Staff.

Fiscal year 1997 was relatively a safe and productive year for the Army, especially given the length of time our soldiers were deployed away from home stations throughout the world. However, I am concerned over the number of soldiers we have lost in **traffic accidents** and **suicides** during this fiscal year. During the period 15 December 1997 through 20 January 1998, 16 soldiers died in motor vehicle accidents while 7 others committed suicide.

A snapshot of our privately owned vehicle fatality statistics for the 1st quarter of fiscal year 1998 indicates that traffic accidents are up 47 percent from the same period last year. Reflecting that negative trend, we have also lost 9 soldiers in traffic accidents in the first 12 days of the 2nd quarter of this fiscal year. The causes of these traffic accidents are all too common: driving too fast for road conditions, driving under the influence of alcohol, fatigue, and simple carelessness. Many of these fatalities could have also been prevented if the vehicle occupants had been wearing their seat belts.

Suicidal behavior is a long process during which people try various methods to reduce their emotional pain. There is no typical suicide victim; it happens to young and old, men and women, officer and enlisted. While many people at some time in their lives think about committing suicide, most prefer to live. They eventually come to realize that their "crisis" is temporary and death is permanent. However, some individuals in the midst of a crisis perceive their troubles are inescapable, that all hope is lost, and that there is no way out of their situation. It is important for leaders at every level to be alert and to make available the many programs, trained professionals, and facilities that are in place to assist those in need. Every member of the Total Army deserves the unimpeded opportunity to reach his or her full potential.

This issue is not about managing statistics — the issue is caring for our soldiers. It is unacceptable to lose a single soldier as a result of an action or circumstance that could have been prevented. The solution to these problems is leader business, officers and non-commissioned officers can — and must — make a difference.



SOLDIERS ARE OUR CREDENTIALS—TAKE CARE OF THEM!

Suicide Awareness in the Army

Tragically, suicides occur every day. People of all ranks, sexes, and races commit suicide. As in the poem below, Richard Cory had it all. He had wealth, looks, friends, and admiration of others, but despite it all, he committed suicide. Not everyone shows the common signs of suicide, but almost all suicide victims have experienced some kind of loss, separation, divorce, or financial problems. There is one primary factor that leads to suicide, and that is stress.

Stress comes from loneliness, a heavy workload, finances, relationship problems, and many different areas. In the military, stress can come from a change of mission, deployments, people rotating out of a unit, and working conditions.

Eventually stress builds up to a point where some people consider suicide, and that's where soldiers need to play a role. It is the responsibility of every soldier to look out for his fellow soldier.

If a soldier sees changes in his buddy, such as his buddy not caring anymore, regressing or risk-taking, he needs to take the time to ask his friend if everything is okay and if he'd like to talk. One of the biggest reasons people commit suicide is they think no one cares about them.

When a soldier does see a change in his friend, that soldier needs to find a way to let someone else know, whether it is telling a platoon sergeant, squad leader, first sergeant, or commander.

Commanders must take every case seriously. Commanders can't ignore any soldier. They need to refer soldiers to a professional without

wasting any time. Soldiers need to understand that they will not be punished if they are referred to mental health or if they decide to go on their own merit.

Soldiers contemplating suicide require immediate professional help at a time when they are least capable of seeking it. Although some potential suicide victims display warning signs, not all do. Therefore, leaders should be aware of life stresses that raise suicide risk as well as the

signs and symptoms of a person at risk (see Signs box). For example, feeling socially isolated or having a chronic or terminal illness can increase the risk of suicide.

Unit commanders need to be able to recognize when a person is at risk for suicide. A key to suicide prevention is positive leadership, careful listening, and

deep concern for soldiers who are at increased risk. Army chaplains can help in this area. They are trained in suicide prevention and are responsible for conducting suicide-prevention training in units and family-support groups. They can also provide information on suicide warning signs, appropriate coping mechanisms, and intervention resources. Above all, they can get at-risk soldiers the help they need. And by helping soldiers deal with problems in their lives more effectively, the Army hopes to improve readiness and quality of life and protect its most important resource—YOU!

We must protect our soldiers and their family members. Leaders must instill an attitude of taking care of each other throughout the force. ♦

—Adapted from Fort Carson *Mountaineer*

*And he was rich—yes, richer than a king—
And admirably schooled in every grace,
In fine, we thought he was everything
To make us wish we were in his place.
So on we worked, and waited for the light,
and went without the meat, and cursed the bread;
And Richard Cory, one calm summer night,
Went home and put a bullet through his head.*

—Edwin Arlington Robinson

Are you feeling stressed?

Signs of stress in yourself:

- Aggression
- Anxiety
- Apathy
- Depression
- Diarrhea
- Dry mouth
- Fatigue
- Forgetfulness
- "Freezing"
- Frustration
- Guilt
- Headaches
- Hot and cold spells
- Inability to concentrate
- Pounding heart
- Irritability
- Loneliness
- Low self-esteem
- Moodiness
- Nausea
- Nervousness
- Nightmares
- Numbness

Signs of stress in others:

- Alcohol/drug abuse
- Denial
- Emotional outburst
- Excitability
- Impulsive behavior
- Inadequate eating/drinking
- Negativism
- One-track thinking
- Regression to immature behavior
- Restlessness
- Risk-taking
- Smoking
- Speech disorder
- Trembling

Signs of stress in the unit:

- AWOL or sick call
- Lack of cohesion
- Low productivity
- Bickering
- Ignoring orders
- Sensitivity to criticism
- Dissatisfaction
- Insubordination

Suicide risk factors:

- Previous self-destructive acts
- Family history of suicide
- Loss of a friend or someone close through suicide
- Misuse of alcohol and/or drugs
- Family history of alcoholism

Suicide warning signs:

- Irritability
- Unkept appearance
- Alcohol misuse
- Anxiety
- Isolation
- Depression
- Impulsivity

Suicide demographics:

- Marital/relationship problems
- Miscellaneous
 - decline in work performance
 - financial problems
 - social withdrawal
- Alcohol abuse/misuse
- Involuntary separation

Myths about suicide:

- Only crazy people commit suicide
- People who talk about suicide won't commit suicide
- Asking someone about suicide will give them the idea
- Suicide is an inherited trait

The nose knows not

There's an invisible gas that kills hundreds of people each year and makes thousands of others ill. In FY 98 alone, it has killed two soldiers. This killer can strike anyone, but the most vulnerable victims are children, the elderly, and people with health conditions, especially those with heart and lung problems. This killer can't be seen, it can't be heard, it can't be tasted, and it can't be smelled.

What is it?

Carbon monoxide—a colorless, odorless, and tasteless deadly gas. Often abbreviated CO, carbon monoxide is a poisonous gas that is produced by the incomplete burning of fuels and materials. Carbon monoxide quickly bonds with hemoglobin in the blood and displaces the oxygen that organs need to function. Breathing small amounts of carbon monoxide may present symptoms that mimic other medical conditions such as the flu or common cold. Symptoms at first include a tightness across the forehead, followed by headache, dizziness, pounding heartbeat, and nausea as the cells and brain suffer from lack of oxygen. Other symptoms include tightness across the chest, inattention, fatigue, lack of coordination, weakness, and confusion. However, prolonged exposure could lead to fainting, unconsciousness, and death.

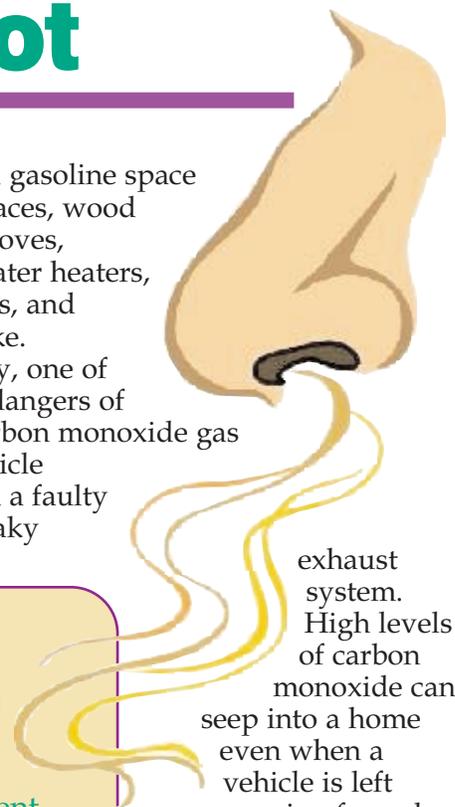
Where does carbon monoxide come from?

It is important to understand what causes carbon monoxide and how to avoid it, because it can kill before its victims know it's there.

Many CO poisonings are caused by equipment failures resulting from improper installation, poor maintenance, defects, damaged parts, or inadequate ventilation. Carbon monoxide can also be emitted by combustion sources such as household appliances, unvented

kerosene and gasoline space heaters, furnaces, wood stoves, gas stoves, fireplaces, water heaters, charcoal grills, and tobacco smoke.

Commonly, one of the greatest dangers of breathing carbon monoxide gas is from a vehicle running with a faulty muffler or leaky



Safety Tip

An important reminder is carbon-monoxide detectors should not be used as a replacement for proper use and maintenance of fuel-burning appliances, but only as a back-up. Likewise, CO detectors are an addition to smoke detectors; they don't replace them. ♦

exhaust system. High levels of carbon monoxide can seep into a home even when a vehicle is left running for only two minutes in an attached garage with the overhead door open. Once the vehicle is backed out of the garage and the garage door is closed, large concentrations of gas still

remain trapped in the garage and can rise to lethal levels.

Recently, carbon monoxide poisoning took the life of a soldier. After returning from a field training exercise, the soldier was given a pass and a safety briefing before leaving the company area. Unfortunately, he didn't listen and started drinking excessive amounts of alcohol before his trip out of town. The soldier stopped along side the road for a nap, and failed to turn off the engine and open the windows. The cigarette he was smoking dropped onto the floorboard and started a fire that spread to the gas tank. The soldier never woke up.

How do you know if you're suffering from carbon-monoxide poisoning?

The best way to know is to have a carbon-monoxide detector installed in the home. Carbon monoxide is virtually impossible to detect without monitoring equipment. The CO detector is designed to sound an alarm before dangerous levels of carbon monoxide

accumulate in the home.

If the presence of carbon monoxide is suspected, immediately evacuate the area and get fresh air. It is important to call the gas company, oil company, or fire department from a neighbor's house. Most importantly, seek medical attention at once if flu-like symptoms appear.

Where should I install a carbon monoxide alarm?

Install the carbon monoxide alarm in the hallway near the sleeping area so it will awaken the family if the alarm goes off while asleep. Additional alarms on each level of the home provide extra protection.

Install CO alarms at least 15 feet from any combustion appliance, such as a gas or oil furnace, oven, water heater, etc.

What can be done to prevent CO poisoning?

- Ensure that appliances are properly adjusted and working to manufacturers' instructions and local building codes.
- Obtain annual inspections for heating system, chimneys, and flues and have them cleaned by a qualified technician.
- Open flues when fireplaces are in use.
- Use proper fuel in kerosene space heaters.
- Do not use unvented gas or kerosene space heaters in enclosed spaces.
- Do not use ovens and gas ranges to heat the home.
- Make sure stoves and heaters are vented to the outside and that exhaust systems do not leak.
- Make sure the furnace has adequate intake of outside air.
- Do not burn charcoal inside a home, cabin, recreational vehicle, or camper.
- Make certain all vehicles are tuned-up and running clean.
- Check and repair exhaust system leaks.
- Never leave a car or lawn mower engine running in a shed or garage, or in any enclosed space. ♦

Be safe. Your nose doesn't always know, especially with CO.

"Flu or Flue?"

Flu-like symptoms may not be the flu at all, but indicate that there is a carbon monoxide (CO) problem in the home.

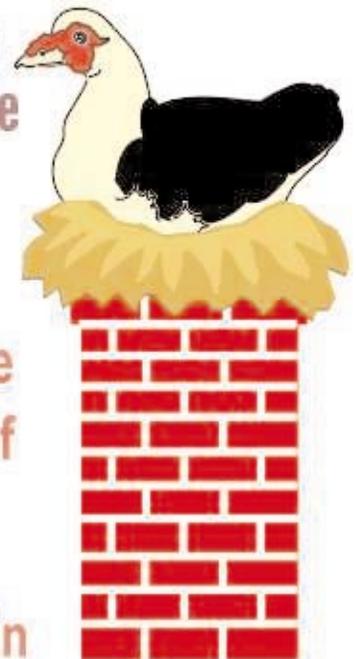
Common Symptoms of Carbon Monoxide Poisoning



- Headaches
- Fatigue
- Disorientation
- Nausea
- Dizziness

Common Sources of Carbon Monoxide

- Blocked Chimney
- Cracks in Flue
- Malfunction of Fuel-Burning Appliance
- Car Running in Garage



Stay dry—stay alive!

The end of winter and the approach of spring is almost upon us. Let's remember all the hazards of soldiering during this time of season: rain, wind, fog, freezing precipitation, and chilling cold temperatures. Yes, there are still extremely low temperatures this time of year; therefore, cold injuries such as hypothermia can and do happen. Even at moderate temperatures, soldiers who are exposed for long periods of time without adequate protection can experience hypothermia injuries and even death.

We can't stop the calendar, but we can control risks and minimize accidents and injuries. Soldiers should be trained to watch for hypothermia. If someone gets a cold injury once, they're far more susceptible the next time for reoccurrence. Prevention is every soldier's responsibility. And commanders are responsible for their soldiers. Successful prevention of hypothermia requires prior planning.

What kind of planning? Apply the following plan of action during a cold emergency:

■ **Stay dry.** This is very important! Wet clothing causes the body to lose heat 5 times faster than dry clothing. Cotton denim is about the worst fabric you can wear in wet weather; it readily absorbs water and wicks it upwards.

■ **Wear layers.** Avoid tight clothing. Loose-fitting clothing in layers produces the best insulation.

■ **Avoid overheating.** If you start to perspire, remove a layer of clothing and any wet clothing

items (water removes heat up to 32 times faster than air).

■ **Protect your feet.** Wear all-leather boots instead of jungle boots. Wear wool or a polyester blend of sock to keep feet warmer and draw away more moisture than cotton socks. For those with notoriously sweaty feet, be sure to change your socks throughout the day as needed.

■ **Keep extremities covered.** This includes ears, nose, hands, feet and especially the head and neck. The brain demands heat, and it must maintain blood flow to keep functioning. Sheltering the head and neck and wearing wind- and rain-proof clothing protect and reduce body heat loss.

■ **Drink water.** Last, but certainly not least, it is important not to dehydrate.

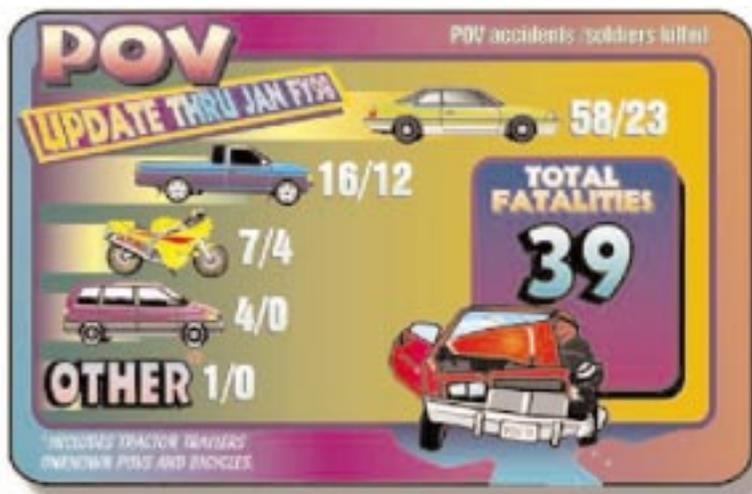
Hypothermia symptoms:

- Uncontrollable chills and shivering
- Poor circulation—numb with goose bumps
- Muscular coordination impaired
- Sluggish thinking and speaking
- Irrational behavior
- Unconsciousness, irregular heartbeat, and death

✚ **First aid.** Strip off wet clothing and wrap victim in blankets or a sleeping bag. Get victim to a heated location and medical treatment as soon as possible. ♦

POC: MAJ Robert Wallace, USASC Industrial Hygienist, DSN 558-1122 (334-255-1122)

Safety Tip: Prevention of hypothermia is simple. Treatment is not. Hypothermia can kill!



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Burt S. Tackaberry
Brigadier General, USA
Commanding

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Training to standard is key link in saving lives

To win on the modern battlefield, we must continue to train to strict standards, even when faced with reduced budgets and subsequent downsizing of our military.

Soldiers must be trained to established standards and held responsible for their technical and tactical competence. Leaders must

be ready, willing, and able to enforce those standards. Training must be realistic and professionally done with achievable purposes and goals.

Soldiers who aren't trained to standard get hurt, or worse—killed. Training to established standards produces more skillful, more disciplined, and safer soldiers.



Far too often, driver training is taken for granted. Most young soldiers have been driving for several years before they enter the Army, and it's not unusual to take their driving skills for granted. However, AMVs are not the standard equipment found in America's driveways. It takes specialized training to keep the Army's vehicles rolling safely.

—BG Burt S. Tackaberry, CG, U.S. Army Safety Center

POV update
THRU FEB FY 98
50
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The director's corner

A key part of the Safety Center's mission is to assist commanders, leaders, and managers in protecting the Total Force. In order to accomplish this task, Army values must be reinforced at all levels to enhance readiness through a full dimensional risk management-based Army Safety Program.

Leaders are responsible for the professional development of soldiers for the 21st century Army. They must be knowledgeable in training management, supply, and logistics, as well as being technical and tactical experts in all METL-related tasks.

Perhaps more importantly, leaders must be leaders of character, leaders who internalize Army values and take topnotch care of the soldiers and families under their supervision.

The importance of values is not new. Commanders have always understood that values are the heart and soul of our great Army. The Army focuses effort on the training of Army values, training that is absolutely essential to our profession of arms.

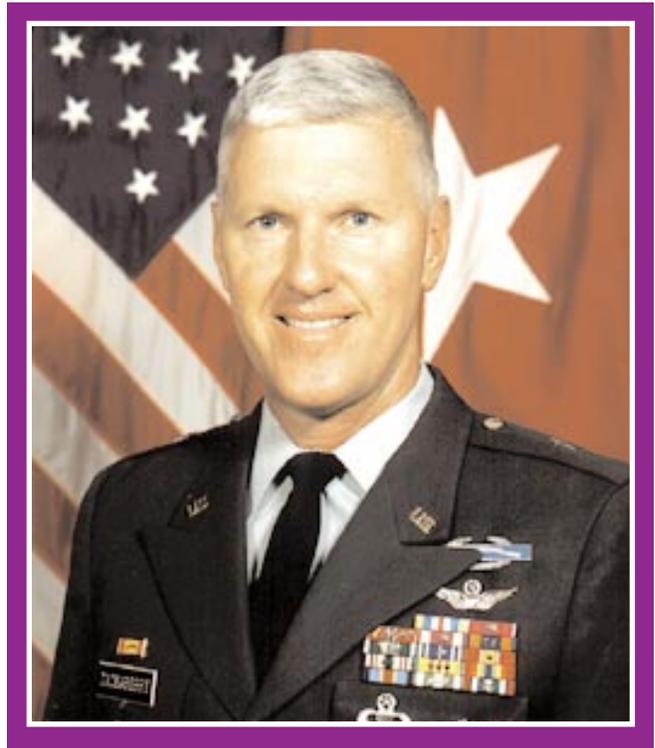
General Dennis J. Reimer, our Army Chief of Staff, recently approved a new acronym, LDRSHIP (pronounced leadership), using the first letter of each value. The Army's seven core values are: **L**oyalty, **D**uty, **R**espect, **S**elfless service, **H**onor, **I**ntegrity, and **P**ersonal courage.

Young officers and noncommissioned officers are formally introduced to these values during the pre-commissioning process at West Point, Officer Candidate School or Reserve Officer Training Corps, and in all levels of NCO schooling, from PLDC through Sergeants Major Academy. Frequently new lieutenants and sergeants arrive for training with varying degrees of understanding of these values as a way of life.

As junior leaders, they are expected to set the example and serve as role models for their soldiers. They lead by example in demonstrating the importance of values, as these values are clearly the bedrock of the Army.

While commanders, leaders, and managers are all individually responsible and accountable for soldier safety, protecting the force with emphasis on Army values requires a team effort. Soldiers at all levels must understand the relevance of adhering to values at all times.

A unit must always do what is right and report all incidents/accidents—even if the unit gets a black mark against them. To illustrate this



point: Recently, a maintenance error caused a minor AMV accident. The unit failed to investigate and report the accident because it would reflect against their zero accidents record. Subsequently, this maintenance error was repeated and caused the same malfunction to another AMV only a few days later; this time it resulted in a fatal accident. This accident should have been initially investigated and reported. As a result, this lesson learned was no "value" to anyone, especially the misfortunate soldier that lost his life.

The Army requires that accidents be reported for a number of reasons. But the most important one is the gathering of information to help prevent future accidents. Safety personnel at all levels attempt to analyze accident report information to identify problems so they can develop countermeasures that will eliminate them. *Countermeasure* is focused on getting the word out and will continue to provide all available safety information to you.

We must all do our part to help make the Army as safe as it can be. We must continue to emphasize the Army's values to ensure that each of our missions is carried out in a safe and professional manner. ♦

—BG Burt S. Tackaberry, CG, Army Safety Center

A word from the SMA:

“A soldier was driving his vehicle southbound on a highway with two other soldiers from his unit. For unknown reasons, he ran off the road and struck a bridge rail. No one was wearing seatbelts. The driver was ejected from the vehicle and sustained massive injuries. The second soldier was transported to a local hospital where he was pronounced dead. The third soldier was admitted with internal injuries and is presently in critical condition. Next of kin notification has not been completed.”

How many times has this happened at your post? I can tell you, it is happening too often in our Army.

In the peacetime Army, the number one enemy killing our soldiers is privately owned vehicle (POV) accidents. Since the beginning of this fiscal year, there has been a significant increase in POV deaths. Do you realize that every three days, one of our soldiers dies in a POV accident? This really bothers me.

The reason this bothers me is that the same common mistakes are happening over and over again. Driving too fast for road conditions, fatigue, and simple carelessness account for the greatest number of accidents. We, as NCOs, have to get involved. How? Seatbelt usage is critical. Many of these fatalities could have been prevented if the vehicle occupants had been wearing their seatbelts. It has been proven that seatbelts do save lives. They are also mandatory on all installations, but we still have soldiers who fail to comply with regulations.

Army regulations require that seatbelts be used by all drivers and passengers in vehicles on military installations, and by soldiers on and off post, on and off duty. Seatbelt usage is not an option; it is the standard.

Remember you, our soldiers, are our most precious resource. Protect yourself from this killer, our number-one peacetime enemy. Buckle up, slow down, obey the law, and don't do stupid things.

I also want to take this opportunity and this forum to challenge the NCO Corps. I challenge you, the noncommissioned leaders of our Army, to get involved and help your commanders to reverse the tragic upward trend of POV accidents and fatalities. Take care of your soldiers. You affect their actions, both on and off duty. You can make a difference by knowing your soldiers and their current situations. For example:

- Identify soldiers who are returning from a major exercise or preparing to go on a major deployment.



- Identify high-risk soldiers, such as habitual traffic offenders, known alcohol or drug abusers, and personnel with disciplinary or attitude problems.

- Identify soldiers with financial problems, family problems, job-related stress, and fatigue.

- Identify soldiers planning to drive on a long trip over a 3- or 4-day weekend.

These are just a few of the factors that can help determine appropriate risk management controls to reduce the chances that one of your soldiers will be injured or killed in a POV accident. Train safety! Train soldiers to be careful and to use the risk management process both on and off duty. Then, ensure you enforce the standards.

We, the NCO Corps, can—and must—make a difference! ♦

—SMA Robert E. Hall

A matter of fact—train drivers to standard

To keep the Army rolling, leaders need to train qualified soldiers to standard and supervise to enforce performance to that standard.

Soldiers continue to be injured and killed because of inadequate driver's training. They are not instructed in the proper methods to drive an Army motor vehicle (wheeled & tracked) safely in all of the conditions that the vehicle can be expected to operate. Some of these soldiers may know how to drive in the civilian world and are probably fairly good drivers, as long as they are on controlled, well-paved,

and properly marked highways.

Advanced individual training (AIT) only familiarizes soldiers with various types of vehicles. They get their learner's permit after they arrive at their unit for the type of vehicle they will be expected to operate. All too often, leaders believe that driving an Army motor vehicle is no big deal, that anyone can do it, no matter what sort of training he or she has or hasn't had. Such an assumption can be deadly.

The result is a group of young, hard-charging soldiers, right out of AIT, assigned to their first Army vehicle and told to "get 'em ready."

Build a strong driver training program. We owe it to our soldiers to give them the best driver training that's possible and to put the best driver behind the wheel of Army vehicles.

By-the-Book Training Saves Lives!

First mistake! The supervisor or section leader assumes his new drivers are up to par on every aspect of their vehicle; why of course, they are school trained. Wrong again!

Sure, these soldiers have had some familiarization training, but this is only limited exposure to the vehicle's specific capabilities.

The unit needs to develop a well-structured, well-defined training program that incorporates the standards laid out in TC 21-305, Wheeled

Vehicles Driver's Training Program. That's where a battalion training officer or battalion S3 comes in and identifies the resources for such a program.

Too often the unit commander is told "train your drivers, but do it during motor stables." Wrong again!

AR 600-55, The Army Driver and Operator Standardization Program, requires that the training program not be delegated below the battalion level. It requires the battalion to set up a comprehensive driver training program to follow very specific tasks, conditions, and standards that have been developed in the TC 21-305 series. These manuals cover every facet of training from the proper maintenance procedures, driving in all types of weather and over all types of terrain, towing procedures, and emergency procedures. There is a program for each vehicle that the Army has.

FM 21-17, Driver Selection Training and Supervision Track Combat Vehicles, offers a concise, well-thought-out sequence of training along with excellent examples of a viable training program that can be conducted at the battalion or squadron level. FM 21-305, Manual for the Wheeled Vehicle Driver, offers the same basic information. By combining the format from FM 21-17 with that of FM 21-305, a viable training program and training circulars for tracked vehicle drivers can be developed. The TC 21-306 series is currently in development. These series of TCs will do for tracked vehicle training what the TC 21-305 series do for wheeled vehicles.

All this sounds good so far, but it still has to be implemented, carried out, and most importantly, tested and followed up.

A battalion-level driver training program is the only way to carry out such a plan. Battalion commanders should gather senior experience in the unit and develop a challenging program that gives driver training the importance it justly deserves.

Identify time, training areas, and specific levels of accomplishment before soldiers are issued a driver's license. Give this program the highest visibility and develop it into a major training objective. Recognize these individuals by developing a driver's award program within the battalion to signify their importance to the team effort. These drivers will be handling highly sophisticated and expensive Army equipment that will require a much higher degree of training than has been administered in the past.

For too long, the Army driver has been left to his own devices and has managed to do a good job. But given that extra measure of specialized training, that extra recognition of additional skills, and the confidence that he is well-trained in all phases of combat driving will do more for this Army's combat readiness posture than any other endeavor.

It's time to put the emphasis on driver's training and regard these soldiers as being the key to the successful deployment of our units in combat. Let's raise the standards of training, enforce those standards to what you would want them to be if your life depended on it.

—BECAUSE IT DOES!

All too often, leaders believe that driving an Army motor vehicle is no big deal. They think anyone can do it, no matter what training he or she has or hasn't had. Such an assumption can be DEADLY.

Inexperience kills!

Soldiers shouldn't get hurt or killed while learning to do their jobs!

The unit moved out from the motor pool to the designated local training area (LTA). Prior to movement, drivers' licenses were checked for those driving in the convoy and a safety briefing was given. Once in the LTA, the standard safety briefing was given and training began. The accident vehicle's driver first went to the HMMWV station and received a block of instruction on the HMMWV and its characteristics. She felt comfortable with this vehicle because it was similar to her privately owned vehicle (POV), in which she was a licensed and experienced driver. The driver's supervisor rode in the back of the HMMWV to observe her performance. After having successfully driven the HMMWV, the driver went to the 5-ton station, but it had a backlog so she went to the M577 Carrier, command

post station. Her supervisor elected to give the M577 instruction instead of the designated instructor.

The supervisor put the soldier in the driver's seat of the M577, engine running, and gave a quick block of instruction on operation of the laterals, gas pedal, shift lever, and location of the gauges. They then proceeded on a course road going between 5-10 mph with no apparent signs of difficulty. After completion of the second lap, the supervisor then had the driver increase her speed to 15-20 mph. Without warning, the driver oversteered and lost control of the track and ran into a 12-inch diameter tree which fell on the track commander (TC), breaking his neck. The driver immediately went for help. The first personnel on the scene shut the track off, checked for vital signs, which

there were none, and started cardio-vascular pulmonary resuscitation (CPR). The designated combat lifesaver arrived at the scene and took charge of the victim. Approximately 15 minutes later, someone was sent to the nearest phone to call for an ambulance.



The inexperienced driver of this M577 lost control of the track and ran into a tree. The tree fell on the track commander resulting in fatal injuries.

Time passed and the command decided to move the soldier from the back of the M577. The ramp could not be lowered because of the tree leaning against it, so the soldier was taken out the troop door without the proper medical support, such as a C-collar or backboard. The patient was loaded into a HMMWV and taken to a hospital in the town that the unit was from, when in fact the closest town was in the other direction. After transporting the soldier to the hospital, the ambulance with the emergency physician finally arrived at the accident scene.

Murphy's Law: Anything that can go wrong, will go wrong. And it did!

There were several vital errors committed by the unit and its leaders during the unit training exercise. This particular driver did not have the applicable learner's permit as required

by AR 600-55 for the M577 and the supervisor should have let a qualified instructor ride with the student because of her inexperience. Other factors that contributed to the death of this soldier were: the chain of command did not occupy the LTA in accordance with their LTA SOP; they had no communication set up, no litter for transport of personnel, no combat lifesaver certified by the first 05 in the chain of command, and no dedicated marked vehicle for evacuation. In addition, the unit did not have tasks, conditions, or standards outlined for this training event or a formal risk assessment completed by the chain of command.

Driver's training sounds routine, but as you have read, it is filled with Murphy's Law, which in this case claimed a soldier's life.

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Shortcut costly

Lowered standard kills one soldier and injures another

The track commander (TC) was killed when he was thrown from his M577 after it went out of control and rolled over an embankment. The unit was short of drivers for the night convoy movement, so the squad leader and TC licensed an untrained driver to operate the M577. The track had fallen behind in the convoy, and the inexperienced driver lost control while trying to change gears. The track veered off the road and went up an embankment before rolling over and coming to rest upside down on top of the TC.

Standards. We know the standards in most cases. It's when we accept less than the standard or fail to enforce the standard that our soldiers get hurt or killed. Knowing and enforcing the standards could have made a difference.

As leaders, we need to ensure that drivers are properly trained to standard on all skills required to perform the mission.



Ensure drivers know and practice the following:

- Keep attention on driving. Don't take eyes off the road.
- Keep speed moderate and appropriate for road and weather conditions and visibility.
- Limit the need for brakes. Start slowing down well in advance of curves, intersections, or stopped traffic.
- Steer evenly and methodically.

Two leaders lowered the standards. One paid for it with his life. ♦

Live-fire accidents

The firing line is NOT clear!

A task force was conducting a company/team (CO/TM) combined arms live-fire exercise (CALFEX). The purpose of the exercise was to conduct CO/TM combat operations requiring a high degree of fire power, mobility, and shock effect. This was to be the ultimate test in training and performance during combat missions in a realistic live-fire environment. The force was task organized of eight CO/TMs, consisting of four tank heavy teams and four mechanized infantry heavy teams.

One company mission was to conduct a deliberate attack to seize an objective and protect the task force right flank as the task force attacked forward. This company consisted of two infantry platoons and one tank platoon that was the maneuver element.

A section of the tank platoon reached its predesignated firing positions and began to lay fire on targets to the left of the objective. Meanwhile, two tracked

vehicles from one of the infantry platoons (carrying the assault element) moved across the phase line and halted in their dismount position. The assault elements dismounted their tracked vehicle and began to move toward the front of the objective. At this time, the other section of the tank platoon reached its position and also began firing on targets to the left of the objective. As the dismounted elements moved forward, there was a lull in firing; however, the tank platoon had not yet shifted their fires. The dismounted element realized that they were in the direct line of fire of the tanks just as two infantry soldiers were hit by machine gun fire. One soldier was killed and another soldier was seriously injured. The infantry platoon leader realized what was happening and ordered his radio telephone operator (RTO) to call "CEASE FIRE" immediately. Simultaneously, he threw a green smoke grenade to alert the task force of the problem. Calls went out

for emergency medical support, and the dead and injured were transported to the local hospital.

Summary

This scenario illustrates a very dramatic and senseless training accident. The company/team commander did not effectively communicate the proper use of clear signals for fire and



During a combined arms live-fire exercise, two soldiers were hit by machine gun fire, killing one and injuring the other.

control measures. This allowed his platoon leaders to begin the CALFEX with different expectations of the signals to be used for the lifting and shifting of supporting fires. As a result, the dismounted infantry ran into its own supporting fires. The company commander did not anticipate the problem of synchronizing execution of the operation order (OPORD). The infantry platoon executed their advance to the objective quicker than other elements of the company team, placing themselves in harm's way. Adequate planning did not facilitate the optimum placement of safety observers. The five safety personnel were located directly behind each of the platoons and the commander was in the control tower; therefore, they were not in a position to observe the unsafe acts or prevent the accident from happening.

Bradley live-fire accident kills two soldiers

A Bradley company was scheduled to conduct training with the execution of Bradley Tables VIII and XII. The unit fired Range Tables VI, VII, VIII and XI with no problems encountered. At a multi-use range, each platoon separately conducted a day dry run (simulated) and a wet run (live-fire) of Table XII. At approximately 2000, a safety briefing regarding the night phase of Table XII was given. Two platoons finished the night phase of Table XII without incident. The third platoon started the

night phase of Table XII, with four M2 Bradley fighting vehicles. Personnel on board consisted of the crew and infantry personnel assigned to the mission. The platoon entered its final firing position at

Control the risk:

- Train to standard.
- Perform to standard.
- Enforce the standard.



Always be aware of your surroundings. This is important so you can protect the soldiers working around you.

Tactical situations can change rapidly – so before you pull the trigger, make sure you have positive identification. ♦



Dismounted troops were fired upon by friendly fire--three soldiers were killed and one injured.

approximately 0100. Their progress up until this point had been uneventful. The four platoon vehicles were positioned on separate berms, on line, and facing down range.

The infantry personnel dismounted and proceeded to their firing positions located about 90 degrees to the right and 100 meters in front of the platoon vehicles. The Bradleys and dismounted troops engaged targets simultaneously. The target area for the dismounted troops was illuminated by both mortar and hand-held illumination. At approximately 0110, the warning alert "GAS" was given. All Bradley crews and dismounted personnel went to MOPP Level IV. After donning their nuclear, biological, and chemical (NBC) equipment, the dismounted troops and the vehicles proceeded to engage their targets. At approximately 0115, the command "ALL CLEAR" was given to indicate the threat of gas was over. The dismounted troops, some of who were in the process of unmasking and beginning to rise to their knees, were fired upon by a machine gun from their left. There were three fatal injuries and one minor injury from gunshot wounds.

Summary. The officer in charge (OIC) failed

to properly plan the exercise. The firing units were allowed to upload the Bradley's coaxial machine guns and engage troop-type targets with their infantry personnel dismounted. The Bradley vehicle commander failed to properly monitor his turret position allowing it to traverse beyond the firing sector limits.

Analysis. Both of these live-fire accidents had two major things in common:

- ♦ Inadequate planning. Fields of fire were not planned, confirmed, or controlled.

- ♦ Failure to perform to standard. Planned tactics, techniques, and procedures were not in accordance with Army standards.

Countermeasures. Both accidents could have been prevented with a simple five-step risk management process specified in the respective planning manuals with a follow-up of meticulous, proper execution. The Army way is to train as you will fight, but not at the expense of one of your own soldiers. This means that we must train to established standards and employ the five-step risk management process at all times. ♦

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Leaders should take five simple but effective steps before tackling any mission:



Safe sleeping areas

Are you sure this is the safest place to sleep?

The mission was to occupy a tactical assembly area (TAA). The First Sergeant was lining up vehicles to allow enough space to accommodate his whole company. The unit had been in the field for about 2 weeks and the TAA was set up for the soldiers and their equipment for the long convoy back to the rear. Later that evening, the 1SG dug a shallow foxhole next to his vehicle, put his cot in it, and went to sleep. Sometime during the night, a vehicle came through his position. Early the next morning, at around 0445, a soldier came to the 1SG's vehicle to wake him up, but did not get a response. The 1SG had been run over and sustained fatal injuries.

We can think of all kinds of mistakes that were possibly made by the chain of command and individuals in the unit. This accident could have been prevented if a proper sleep plan using risk management tools had been established. The 1SG was correct in sleeping beside the vehicle, but the major mistakes made were: a lack of communication on the sleep plan, no walking guard posted to keep vehicles from driving through the sleeping area, and no ground guides used for moving vehicles.

The designation of where to sleep is a commander's prerogative. That prerogative must be exercised and carries with it the responsibility for a commander to select the area or place

Soldier safety tips:

- Always use a ground guide when moving through troop areas, day or night.
- When ground guiding, always walk a safe distance in front or to the rear of the vehicle.
- Use engineer tape and flashlights or chem lights to warn drivers of sleeping areas.
- Sleep only in designated sleeping areas.
- If no sleeping area is designated, evaluate sleeping position in relation to vehicle locations and routes and ensure the chain of command knows sleeping areas. Never sleep on roads, tank trails, or under vehicles. Be aware that sleeping next to trees does not necessarily protect one from being run over.
- When ground guiding a tracked vehicle near a sleeping area, go very slowly, use a flashlight, and check behind, under, and both sides of the vehicle before moving. Always check the route plan before moving the vehicle. *Coordinate light signals with the driver before operating at night.*

Leader safety tips:

- Establish perimeters for sleeping areas and ensure all personnel use them.
- Before moving a vehicle in an assembly area, require the driver or a crewmember to walk around the vehicle to ensure no one is in danger.
- Require ground guides for all vehicles operating with areas occupied by dismounted personnel.
- Establish manned dismount points at entrances to assembly and bivouac areas and restrict movement of vehicles in such areas during hours of darkness.
- Ensure that ground guides use NVGs when appropriate.
- Within tactical positions, ensure at least one walking guard is posted.
- Soldiers should never be allowed to sleep in front, behind, or under vehicles.
- Ensure that vehicles are not parked where they can roll towards sleeping personnel or on an incline without chocks.

that presents the least hazard to the soldier commensurate with the mission. The safety and welfare of soldiers are the responsibility of the commander.

The first level supervisor is, therefore, responsible to ensure that the commander's guidance is followed. That means the squad leader, platoon sergeant, platoon leader, or whoever is the immediate supervisor of a soldier checks to see if his or her soldiers are sleeping in a safe place and the bivouac location is briefed to

all soldiers in the area.

Every soldier has to sleep, sometime and someplace. When the mission allows the time for sleep, whether that is at 0200, 0600, or 1400 and whether it is for 1 hour or for 8 hours—sleep in an area designated by the commander and where the least hazard exits.

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Make connections with new telephone numbers:

A recent realignment within the Safety Center has changed many of our telephone numbers. You can reach ground sections as follows, DSN is 558-xxxx and commercial is 334-255-xxxx:

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Heavy Tracked Vehicles: MAJ Monroe Harden, x2919; MAJ Jeffrey Brill, x2913; SFC Erwin Bailey, x2908

Light Tracked Vehicles/Field Artillery: CPT(P) Gary Kotouch, x2933; SFC Clarence Welch, x3421

Infantry: MSG Ernest Dobereiner, x2892; SSG Michael Williams, x2959

Airborne: CPT(P) Gary Kotouch, x2933; SFC Clarence Welch, x3421; SSG Michael Williams, x2959

Ordnance: CW3 Gerald Cross, x2966; MSG Peggy Adams, x3575

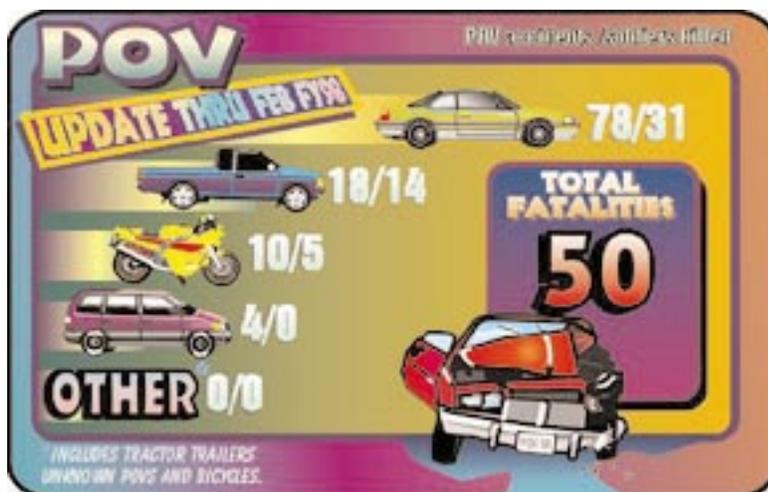
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Burt S. Tackaberry
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Commanding Officer

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MAY 1998

POV update
POV FATALITIES
THRU MAR FY 98
56
FY 97
35

The HEAT is on!

Good ol' summertime. It's almost here and soldiers will be exposed to heat injuries, sunburn, drowning, boating and swimming accidents. These hot weather accidents present a challenge that deserve the utmost care and preparation. That's why this Countermeasure is dedicated to helping commanders and leaders recognize some of the hazards associated with summer.

To keep the fun under the sun—think Risk Management!



Stop upward trend. As of 31 March, we are halfway into FY98 and POV fatalities are still on an upward trend. In FY97, we had 35 POV fatalities at midyear. We have had 56 soldiers die so far this fiscal year. We must reverse this deadly trend and focus on positive, hands-on leadership to curb POV accidents. Everyone, at all levels, must get involved. We cannot continue to allow POV accidents to claim the lives of our young soldiers.

—BG Burt S. Tackaberry, CG, U.S. Army Safety Center

Director's corner

For many of us, the month of May simply marks the end of a school year and a change of seasons. This is the time when we are planning our vacations and weekends at the beach with family and friends.

Sunshine, heat, and humidity are a dangerous combination. These conditions present a challenge to all of us who train or exercise under the treacherous summer sun. The article, "Reduce Hazards of Heat Injuries" (page 3), explains what happens when soldiers are exposed to the harsh conditions of heat and humidity and the importance of hydration. We must ensure that our soldiers are aware of the heat injuries that can result.

The water-related articles, "Boat Smart From the Start" (page 7) and "Swimming" (page 9), explain that water-related activities such as boating, swimming, and fishing are fun but are to be treated with the utmost care and preparation. Most recreational boating accidents involve operator-controlled factors. The leading causes of fatal boating accidents are choosing not to wear a life jacket, boating under the influence of alcohol or drugs, operator inattention or carelessness, speeding, and falling overboard. Do any of these sound familiar?

I also want to take this opportunity to remind commanders of two important issues: Memorial Day safety briefings and *POV Risk Management Toolbox*.

I recommend leaders provide a safety briefing to their personnel prior to the upcoming three-day holiday weekend commemorating Memorial Day. The potential for serious accidents and injuries increases during this holiday as soldiers and their families take to the road in their POVs, as well as engage in other high-risk activities associated with the summer season.

I want all leaders to be aware of the *POV Toolbox* (2d ed.), which is available by contacting your local safety office, U.S. Army

Safety Center, or it can be accessed via the Army Safety Center website:

<http://safety.army.mil/toolbox.html>. This

toolbox contains a collection of "instant expertise" to assist commanders, leaders, and noncommissioned officers on how to reduce the risk of hazards that are killing our soldiers in POV accidents. It is designed to give leaders many options to build or reinforce an effective POV accident prevention program.

The *Leader's Guide to Using the POV Toolbox* is also available as a supplement to the toolbox and is accessible from the same sources. It is designed as a guide for first-line leaders to use in learning about the POV toolbox and teaching soldiers how to recognize and avoid potential hazards.

We are enthusiastic about the risk-reduction potential of these tools. As tasked by the Chief of Staff, Army, I have already started to brief the six-point program to every major command within the Army. As with any program, solid command support, with emphasis up and down the chain of command, is the key to success.

ALWAYS REMEMBER – SOLDIERS DO BEST WHAT THE COMMANDER EMPHASIZES!

—BG Burt S. Tackaberry, Director of Army Safety



Editor's note: Due to possible misinterpretation, we ask that the following be deleted from the *POV Toolbox Safety Quiz*: Question #3 on page 32 and Answer #3 on page B-1. These will be corrected in the next edition of *Toolbox*.

POV Accidents: Speed =40%



Fatigue =37%

Situational Awareness =23%

Reduce hazards of heat injuries

With summer quickly approaching, soldiers need increased awareness of the hazards associated with hot weather training and the controls necessary to prevent heat injuries. Training in hot weather presents distinct hazards that have to be managed. Heat stress affects judgment, and accidents are the likely outcome. Increased body temperature and discomfort promote irritability, anger, and other emotional states. This can cause soldiers to overlook safety procedures or to take unnecessary risks.

Supervision is the key to protecting our soldiers from heat injuries. However, the individual soldier also plays an essential role in preventing heat injuries. Leaders and individual soldiers, as a team, can identify the early signs of heat stress and prevent casualties. Don't let personal 'hard knocks' be your teacher – be proactive!!!

☀ It was a hot July afternoon and a soldier was in his fourth week of basic training. Unit training was moved to the rifle range where the heat category rose to level 5 (WBGT > 90°). The soldier complained of headache, nausea, dizziness, and feeling overheated. Weather and symptoms suggested heat stress, so he was moved to the shade, his clothing was loosened, and he was given water. Over the next 1½ hours, he drank approximately four quarts of water and vomited repeatedly. The soldier required assistance in walking, and was again placed in the shade and instructed to drink more water. Over the next two hours, he drank an estimated 10-14 canteens of water and continued vomiting. By mid-afternoon, he was physically incapacitated and transported to the hospital. Despite intensive medical care, the soldier never regained consciousness and died of hyponatremia (associated with low sodium in the blood and excessive water consumption). Although the treatment started out correctly, **the maximum water intake the body can tolerate is 1½ quarts per hour.**

Types of heat injuries

Most heat injuries, such as sunburn, heat cramps, heat exhaustion, and heat stroke occur during physical training, road marches, and

while training in MOPP gear, but can easily occur in any hot environment. The following examples represent these injuries with associated first-aid measures.

■ Sunburn

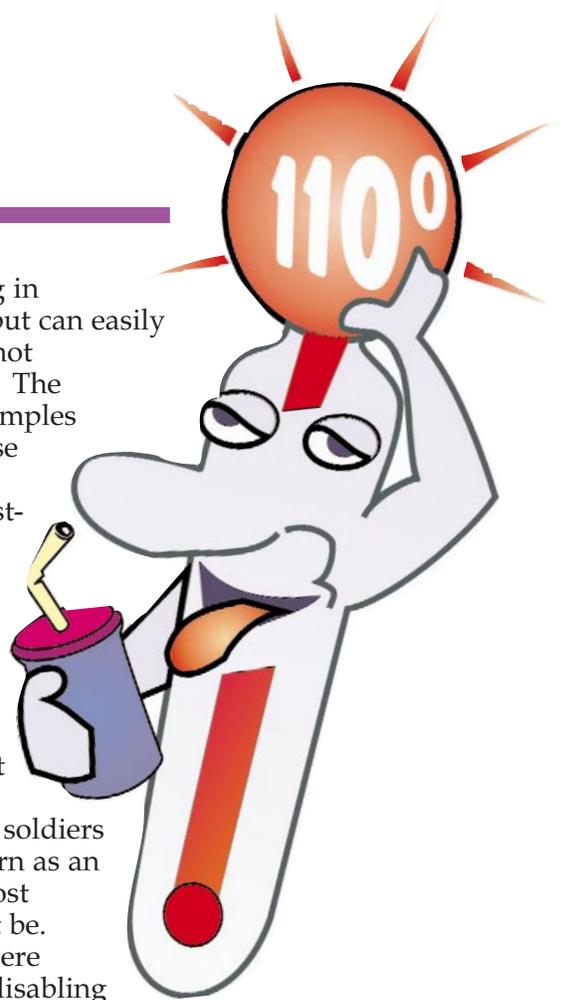
comes from over-exposure of the skin to the ultraviolet radiation of the sun. Few soldiers regard sunburn as an injury and most times it won't be. However, severe cases can be disabling and can lead to other forms of heat illness. Sunburn protection is an individual responsibility, but commanders must warn their soldiers of sunburn's effects.

✚ **Prevention:** Common sense dictates maximum use of shade, sunscreen, and/or clothing that covers as much exposed skin as possible.

■ **Heat cramps** are painful cramps of the muscles caused by a heavy loss of salt through sweating. An individual may lose more than a quart of water per hour through sweating, radiation, and urination. Generally, the cramps will disappear with treatment.

✚ **First-aid:** Move the victim to shade and loosen clothing. Treatment includes frequent intake of water, a cup (8 oz) every 15-20 minutes, not to exceed 1½ quarts per hour. **Thirst is not an adequate indicator of dehydration.** If cramps persist, dissolve ¼-teaspoon table salt in one quart of water, and have the victim slowly drink at least one quart of the salt solution. Do not use salt tablets!

Alcohol, coffee, and soft drinks are not substitutes for water. Alcohol increases dehydration, and coffee and soft drinks are not



absorbed as rapidly as water into body tissue. Commercial sports drinks are sugar-laden beverages that offer very little nutritional value, and may increase an individual's water requirements.

Adequate water consumption, with rest periods, is essential to prevent heat casualties during vigorous activities in hot environments. The practice of sustained "water discipline" involves water consumption at **regular planned intervals**, and must be enforced regardless of individual preference or thirst.

The charts below represent a modification of previous fluid-replacement guidelines. While still undergoing validation, it represents the best guidance currently available from the U.S. Army Research Institute for Environmental Medicine and the U.S. Army Center for Health Promotion and

Preventive Medicine.

■ **Heat exhaustion** is caused by excessive salt depletion and dehydration and characterized by symptoms of profuse sweating, headache, tingling sensation in the extremities, weakness, loss of appetite, dizziness, nausea, cramps, chills, and rapid breathing.

† **First-aid:** Lay victim flat in cool, shady spot. Elevate feet and loosen clothing. Pour water on victim and fan to cool. If conscious, have victim drink at least one canteen full of cool water and give the salt solution. If soldiers do not recover after an hour, **SEEK MEDICAL TREATMENT.**

■ **Heat stroke can be fatal; immediate action is required.** Generally patterned after heat exhaustion; however, skin will be hot and dry. Heat stroke is caused from prolonged exposure to high temperatures and

Fluid Replacement Guidelines for Warm-Weather Training
(Average Acclimated Soldier Wearing Hot-Weather BDU)

Heat Category	WBGT °F	Easy Work		Moderate Work		Hard Work	
		Work/Rest*	Water Per Hour	Work/Rest*	Water Per Hour	Work/Rest*	Water Per Hour
1	78-81.9	No limit	½ qt	No limit	¾ qt	40/20 min	1 qt
2	82-84.9	No limit	¾ qt	No limit	1 qt	30/30 min	1 qt
3	85-87.9	No limit	1 qt	40/20 min	1 qt	30/30 min	1¼ qt
4	88-89.9	No limit	1 qt	30/30 min	1¼ qt	20/40 min	1¼ qt
5	>90	No limit	1¼ qt	30/30 min	1¼ qt	15/45 min	1¼ qt

*Rest means minimal physical activity (sitting or standing) and should be accomplished in the shade if possible.

Note 1: MOPP gear or body armor adds 10°F to WBGT Index.

Note 2: Hourly fluid intake should not exceed 1½ quarts. Daily fluid intake should not exceed 10 quarts.

Easy Work	Moderate Work	Hard Work
<ul style="list-style-type: none"> ● Weapon maintenance ● Walking hard surface at 2.5 mph, <30-pound load ● Manual of arms ● Marksmanship training ● Drill and ceremony 	<ul style="list-style-type: none"> ● Walking loose sand at 2.5 mph, no load ● Walking hard surface at 3.5 mph, <40-pound load ● Calisthenics ● Patrolling ● Individual movement technique; i.e., low crawl, high crawl. 	<ul style="list-style-type: none"> ● Walking hard surface at 3.5 mph, >40-pound load ● Walking loose sand at 2.5 mph with load

Note: Soldiers who are overweight, dieting, or past heat casualties are more prone to heat injuries. As a result, their activities must be closely monitored.

failure of the body's cooling mechanism. Symptoms of heat stroke are mental confusion, disorientation or coma, lack of sweating, throbbing headache, flushed dry skin, nausea, and elevated body temperature. Lack of sweating in the heat is a symptom of imminent heat stroke.

† **First-aid: THIS IS A MEDICAL EMERGENCY – SEEK IMMEDIATE MEDICAL ATTENTION.** Move the victim to shade and cool with ice packs. If packs are not available, soak or douse victim with cool water. Fan body and elevate feet. Do not immerse in ice water. Do not try to give water to an unconscious victim. Ensure cooling process is continued during transport to medical facility.

Control measures

The following guidelines will help prevent heat injuries:

- **Acclimatization** is essential in the prevention of heat injury. Two weeks should be allowed for an individual to acclimatize. However, the amount of time needed depends on the individual's physical condition. Acclimatization requires more than exposure to heat. A person must work through progressively more difficult physical tasks to reach it. Acclimatization is not permanent. Once out of the hot environment, acclimatization will disappear in a week or two. A short illness, time spent in the hospital, on leave, or even working in an air-conditioned office for 2 weeks can undo all the effort put forth getting ready for the heat. If time for acclimatization cannot be provided, supervision and the buddy system become even more important. Don't forget that leaders also need a buddy, because leaders frequently try to tough-it-out to remain in the action.

- **Fluid intake is essential.** Soldiers should drink adequate fluids (see chart on previous page) during the 24 hours prior to a training exercise. During training, fluid intake should be at regular planned intervals to replace the water and salt lost through sweating.

- **Physical condition** of soldiers has a significant bearing on their reaction to heat stress. Infections, fever, recent illness or injury, overweight,

dehydration, older age, fatigue, drugs which inhibit sweating such as antihistamines and cold medicines, alcohol, and previous heat injuries are conditions which may increase the risk of heat stress and cause heat injury. These factors should be considered when assessing the hazards of hot weather.

- **Work schedules** need to be tailored to fit the climate and the situation. Physical exertion increases the amount of heat produced by the body. Heavy work and activities that require lots of physical exertion (marches/calisthenics) should be scheduled for early morning or late evening. Alternating work and rest periods helps. Avoid working in the direct sun, whenever possible.

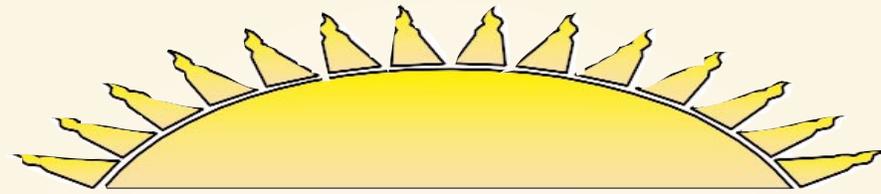
- **Clothing can offer protection,** especially in the direct sun. It prevents radiant heat of the sun from being absorbed by the body. Loose-fitting clothing allows circulation of air and enhances the cooling evaporation of sweat. High temperatures and bloused trousers or tight clothing are sure ways to increase body heat.

- **Wet bulb globe temperature (WBGT).** The WBGT index is the best means of evaluating environmental heat. Most installations have a preventative medicine or environmental medicine section to advise on the WBGT. If there isn't a local source or if in the field, obtain a portable WBGT kit, NSNs 6665-00-159-2218 or 6665-01-103-8547.

Remember, be alert to early signs of dehydration and heat illness. They forewarn of more severe casualties to come without intervention. Successful prevention of heat casualties is more important to the unit than their treatment. FM 21-10-1, FM 21-11, and TB Med 507 are the appropriate guides.

The Army must operate in all types of environment. Just as machines can break down due to excessive heat, so can people. Be smart and don't let it happen to you.

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Ten Commandments of Preventing Heat Injury

1. Provide adequate water and ensure water breaks are taken every 15 to 20 minutes. Do not exceed 1½ quarts per hour. Thirst is not an adequate indicator of dehydration. Alcohol, coffee, soft drinks, and sports drinks are not good substitutes for water. Do not use salt tablets!
2. Ensure soldiers gradually adjust to working in the heat. Acclimatization is essential in preventing heat injuries.
3. Schedule work/rest periods. Schedule heavy work for the cooler part of the day (morning or late afternoon). The body generates more heat when heavy work is being performed.
4. Avoid overexertion. Use mechanical aids whenever possible. Assign tasks between several soldiers to reduce the stress on individuals.
5. Use shaded areas: trees, buildings, tents to reduce radiant heating. The temperature in the sun and under the canopy of a tree can vary from 8° to 20°F.
6. Encourage use of sun screens to protect exposed skin.
7. Wear loose-fitting, light-weight, light-colored clothing. Do not layer clothing; more clothing increases the risk of heat injury. Consider protective equipment—such as MOPP gear—when planning and scheduling activities.
8. Monitor WBGT so the heat-stress index can be evaluated. Environmental conditions, such as temperatures above 70°F (80°F at night), direct sunlight, humidity, and exposure to any toxic agents add to heat stress. The wind reduces the risk of heat stress by increasing the evaporation of sweat.
9. Train soldiers to recognize and treat heat injuries and encourage them to monitor each other for signs of heat stress.
10. Conduct safety meetings to emphasize special heat spell procedures. Be prepared to provide medical assistance.

NOTE TO LEADERS: Reduce and laminate this heat prevention plan and keep for easy reference.

Boat smart from the start

Boats, boats, and more boats! Bass boats, speed boats, sail boats, canoes, kayaks, and jet skis--all have become an increasingly popular recreation activity. Soldiers continue to be hurt and killed in accidents caused by collisions, falling overboard, capsizing, swamping, and grounding.

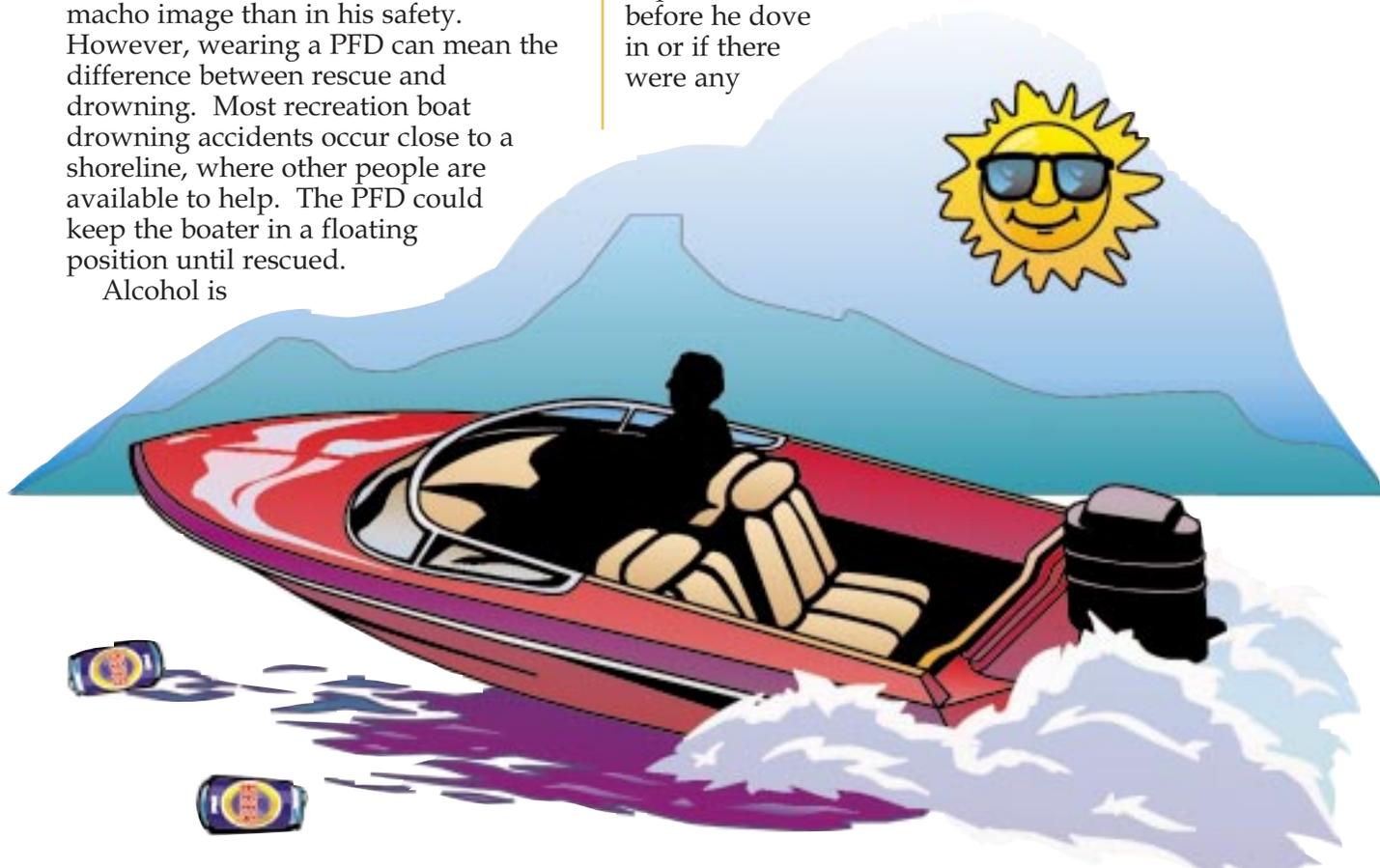
Boating Injuries/Casualties

Operating a boat is more complicated than driving a car; therefore, the potential for hazards increase. Victims of most boating accidents drown because they found themselves in the water unprepared. Once in the water, a personal flotation device (PFD) is the boater's first and best line of defense against drowning. Many PFDs tend to be bulky and hot and are scorned by the boater who is more interested in his macho image than in his safety. However, wearing a PFD can mean the difference between rescue and drowning. Most recreation boat drowning accidents occur close to a shoreline, where other people are available to help. The PFD could keep the boater in a floating position until rescued.

Alcohol is

prominent in recreational boating accidents. Operating a boat while intoxicated is illegal and dangerous. Most states define impairment at .10% BAC. However, even lower levels of blood alcohol may affect a person's balance, vision, or judgment. This can be especially dangerous when on the water. Alcohol also tends to encourage risk-taking behavior and dulls the recognition of foolish behavior. Mixing alcohol, boats, and water is a lethal cocktail. The following is a good example:

■ Three soldiers were fishing in a small boat on a placid lake. After consuming several beers, two of them stepped into the approximately 3-foot deep water. Impulsively, the other soldier dove in head first, breaking his neck. This soldier did not know the depth of the water before he dove in or if there were any



submerged hidden objects. Alcohol affected this soldier's vision and judgment.

Most boating fatalities are preventable if the persons involved would simply stop and think about the possible deadly consequences of their actions.

Due to their small size and limited stability, rowboats and canoes can easily capsize. The most common causes are overloading and sudden movement. Keep weight low and shift bodyweight slowly and carefully. If your canoe capsizes, **stay with the canoe** until help arrives.

No one likes to contemplate falling overboard. None of us believe it can happen to us. The soldier in the following accident must have thought it couldn't happen to him either, because he elected not to wear a PFD.

■ A soldier was fishing in a small boat with three friends. An unexpected wave filled the boat with water.

Another wave capsized it, spilling all four soldiers into the water. Three of the soldiers were wearing PFDs and survived. One was not, he drowned.

Most boaters think that a PFD stowed under the seat or "close at hand" is all that is required in an emergency. If something happens, as previously illustrated, soldiers think they will be able to put the device on in the water and save themselves. Doing so is not as easy as it sounds.

Soldiers who operate boats have a responsibility to themselves, their passengers, and other boaters to do so safely. Safe fun, not foolish and dangerous thrills, is the most important thing.

Of course, soldiers don't go out with the intention of having an accident. Accidents occur when victims are not familiar with the hazards and controls or when they are ignored. The risk-management process helps one to identify hazards and take steps to eliminate risk. This process is used in military operations, but can also be applied to recreational water-related activities as well.

There are five steps to the risk-management process.

1. Identify the hazards. Hazards are dangerous conditions that could be encountered while

performing a task or mission. For example, what are the hazards in taking a boat out? Hazards could include: cold water, strong currents, high wind and waves, and unseen debris in the water. Reviewing other facts such as boat capabilities, operator and passenger skills, and condition of equipment can identify other hazards.

2. Assess the hazards. Each identified hazard must be assessed to determine the probability of its causing a problem and the severity of the consequences should such a problem occur. For

example: Calm, warm water, a sturdy boat and seasoned crew indicate minimal risk with few controls needed.

However, a strong current, cold water and high waves, coupled with a leaky boat and inexperienced boaters, contain much higher risk. Such conditions

increase the likelihood and

severity of an adverse outcome, resulting in losing directional control, getting lost, colliding, swamping, capsizing, hypothermia, or drowning. The hazard with the highest risk determines the risk for the operation: Extremely high, high, medium, or low.

3. Develop controls and make a decision.

Controls for low risk may be as simple as conducting a short safety briefing and ensuring everyone is wearing PFDs. More strenuous controls would need to be enforced for high-risk operations. The boat operator would provide each person with guidance on what hazards to look for and instructions on what to do to deal with it.

If the operator's instructions are on target and are effectively implemented, then the risk should be acceptably low enough to have a safe boating experience.

4. Implement controls. The controls established are put into effect by the boat operator.

5. Supervise. Supervision goes beyond ensuring that people do what is expected of them. It includes following up during and after an action to ensure that all went according to plan, reevaluating the plan or making adjustments as required to accommodate unforeseen hazards, and incorporating lessons learned for future use. ♦



Swimming

Summer months mean hot days and longer daylight hours. That means the majority of Army soldiers and their families will enjoy some manner of recreation involving water: swimming, surfing, fishing, water skiing, scuba diving, snorkeling, and basic boating are long-time favorites. Jet skis and wind surfing are increasing in popularity. Depending on where you live and work, or where you vacation, the season for these activities is here or fast approaching.

All recreational water activities involve potential hazards. One particularly worth noting is alcohol consumption. Although alcohol is commonly a part of summer activities, it tends to impair judgment, leading to overconfidence and taking foolish chances—often with disastrous results. Here are three examples:

■ A soldier was by himself and had an approximate BAC of .17% when he dove into the deep end of a swimming pool. He suffered severe fatal head injuries. **WARNING: Swimming alone is foolish; swimming alone AND drinking alcoholic beverages is deadly!**

■ After consuming unknown quantities of beer, wine, and whisky, a soldier attempted to swim across an off-limits sand pit. He disappeared about halfway across. His body was recovered the next day.

■ Two soldiers waded into an off-limits river, known to have strong undercurrents. One soldier had consumed an unknown amount of alcohol and started swimming to the far shore. About halfway across the river, his head suddenly disappeared below the surface and never reappeared. **CAUTION: Swim only in authorized areas.**

Hypothermia, which contributes to as many as half of all water fatalities, usually kills victims by inhibiting their ability to swim or stay afloat. Hypothermia occurs when the body loses heat faster than it can produce. Body heat is lost 25 times faster in cold water than in cold air. It can occur in any body of water that is less than 70°F, which means larger bodies of water pose a risk even in warm weather months.

■ During a picnic volleyball game, a soldier jumped into a cold, choppy lake to recover the ball. He apparently cramped and drowned approximately 40 meters from shore. The soldier overestimated his ability to swim in prevalent conditions and failed to anticipate the effects of the cold water. ♦

POC: George K. Greenauer, Safety Manager, Ground Systems and Accident Investigations Division, U.S. Army Safety Center, DSN 558-3261 (334-255-3261), greenaug@safety-emh1.army.mil

Safe swimming

Swimming is an inexpensive and fun activity. Soldiers can enjoy swimming if they first identify and control the hazards:

Probable hazards

- Unknown waters
- Cold water temperature
- Unknown water depth/obstructions
- Rocky/shelled bottom
- Inexperienced swimmer
- Lifeguard not present
- Alcohol consumption
- Marine life, critters
- Undertow, currents, waves

Possible controls

- Authorized swim area
- Limit exposure
- Familiarize
- Surf shoes
- Shallow water/PFD
- Buddy system
- Omit, limit
- Alertness
- Awareness



ATTABOY!

Soldiers receive the Army Safety Guardian Award

Soldiers from two different Army posts recently received the Army Safety Guardian Award for their heroic actions in saving lives.

■ **SSG Dennis L. Hatcher, U.S. Army School of Aviation Medicine (USASAM), Fort Rucker, Alabama.** On a fall evening in October 1997, SSG Hatcher witnessed a tragic head-on collision between a privately owned vehicle (POV) and a motorcycle. Through decisive action, SSG Hatcher was able to utilize his medical knowledge to provide on-site emergency medical treatment to circumvent a potentially life-threatening injury.

While traveling behind the motorcycle, SSG Hatcher saw the accident beginning to unfold, but could do nothing to prevent it from happening. The POV did not see the motorcycle on the roadway and pulled out from a side road, striking the motorcycle head on. The driver of the motorcycle did not have a chance to swerve, slow down, or stop and ended up flying over the oncoming vehicle with such force that the helmet he was wearing was ripped from his head. After flying through the air for 35 feet, he landed abruptly on his unprotected head. SSG Hatcher immediately stopped his vehicle and rendered first aid. After quickly assessing the victim's medical condition, SSG Hatcher ran to his car and retrieved his first-aid bag and called the Department of Public Safety with his cellular phone requesting immediate dispatch of a life support unit. After returning to the victim, SSG Hatcher applied an abdominal dressing to the nearest pressure point to slow the flow of blood. While maintaining the dressing in place, he was able to simultaneously immobilize the victim's cervical spine to ensure that further damage was not done. After the paramedic team arrived at the scene, SSG Hatcher continued to assist in the preparation for transport. After following the ambulance to a local hospital, he

notified the victim's family of the situation and provided a sounding board for their questions.

Due to SSG Hatcher's dedication, technical competence, and quick reaction time, a life-threatening situation was averted with the victim making a full recovery.

■ **SGT Kenneth Robinson, Troop C, 1st Squadron (Air), 17th Cavalry Regiment, Fort Bragg, North Carolina.** In mid-May 1997, SGT

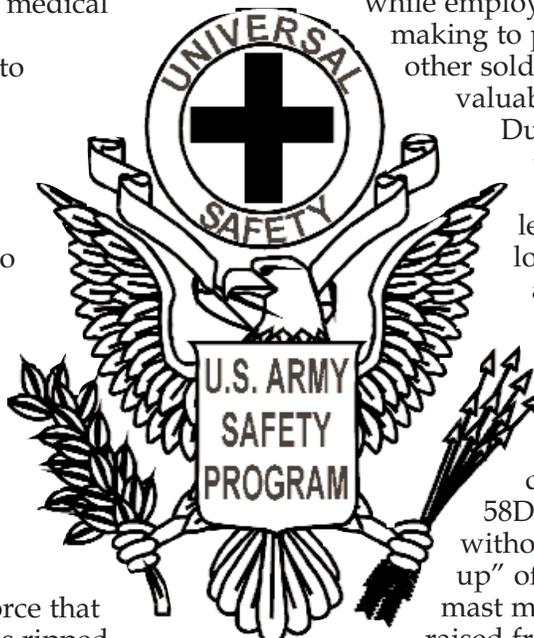
Robinson risked personal injury to himself while employing split-second decision-making to prevent potential injury to other soldiers and major damage to valuable Army equipment.

During a rapid deployment tactical exercise, SGT

Robinson served as team leader for the loading and off-loading of two OH-58D(I) aircraft being transported on a USAF C-130 aircraft. His team performed the airland operation flawlessly and the two aircraft were rolled out behind the C-130 at the destination. The first OH-58D(I) was configured for flight without incident. During the "build up" of the second OH-58D(I), the mast mounted sight (MMS) was raised from its platform on the right

side of the aircraft to the top of the aircraft with a hoist. At approximately 10 feet above the ground, the cable in the hoist separated and broke. Another soldier, who was on top of the aircraft, was unable to control the 164-pound MMS.

Instinctively and with total disregard for his own safety, SGT Robinson strategically positioned his body between the MMS and the aircraft, catching the rocket launcher only inches from the aircraft. The elapsed time from cable failure until SGT Robinson caught the MMS was less than 3 seconds. Through quick action, SGT Robinson prevented what could have been a catastrophic incident, potentially causing injuries, destroying the valuable MMS, the AVR-2 on the MMS, and structural damage to the aircraft. ♦



Safety of use messages

The following is a list of all safety of use messages (SOUMs), ground precautionary messages (GPMs), and maintenance advisory messages (MAMs) issued by Army Tank-Automotive Command (TACOM) and Communications and Electronics Command (CECOM) from 1 Oct 97 through 31 Dec 97.

TACOM GPMs and MAMs

- AMSTA-IM-O, 161817Z Dec 97, subject: SOUM, TACOM-WRN Control No. 98-01, Operational, affecting aircraft refueling nozzles manufactured by Carter Ground Fueling Company, (D-1) Pressure Nozzle, NSN 4930-01-440-1085, NSN 4930-01-297-3777, NSN 4930-01-369-6230, NSN 4930-01-369-9821, or P/N 64349CDF4HX (Cage ODT23). Summary: This message provides the proper procedures for using D-1 refueling nozzles so that an over-pressure situation and possible fuel spill does not occur. Solar heating causes thermal expansion of fuel trapped inside of the nozzles, and thus increases the internal pressure beyond the allowable limit. Hose valves must remain open when D-1 nozzles are attached to prevent fuel from being trapped in the nozzle. POCs: LTC Genaro J. Dellarocco, DSN 786-4200 (810-574-4200), dellarog@cc.tacom.army.mil; Mr. Robert A. Noel, DSN 786-4214 (810-574-4214), noelro@cc.tacom.army.mil; and Mr. Tim Lee, DSN 786-4147 (810-574-4147), leeti@cc.tacom.army.mil
- AMSTA-IM-O, 051958Z Nov 97, subject: SOUM, TACOM-WRN Control No. 97-08, Grove Model AP308T Crane, Warehouse 10K, NSN 3950-01-412-5345, LIN F39104. Summary: This message immediately deadlines all of the subject warehouse cranes. TACOM has been notified that some of the brake wheel cylinders are leaking on the grove model AP308T, 10K warehouse cranes. Units should continue to use the older 10K warehouse cranes until the cause of the leaking wheel cylinders has been isolated and resolved. POCs: Mr. James E. Jump, DSN 786-8901 (810-574-8901), jumpj@cc.tacom.army.mil and Ms. Deborah Raubinger, DSN 786-5001, (810-574-5001), raubingd@cc.tacom.army.mil
- AMSTA-IM-O, 151453Z Dec 97, subject: MAM, TACOM-WRN Control No. MAM-98-002, M1A2 Slave Start Procedures, NSN 2350-01-328-5964, LIN T13305. Summary: This message reiterates the importance of following the correct procedures for slave starting an M1A2

tank. The procedures are not the same for the M1A1 and M1A2. If the correct procedures are not followed, the batteries may not charge properly and damage may occur to the power management systems of both tanks. POCs: Ms. Berniece Dubay, DSN 786-8215 (810-574-8215), dubayb@cc.tacom.army.mil and Mr. Ray Verdaglio, DSN 786-8220 (810-574-8220), verdaglr@cc.tacom.army.mil

- AMSTA-IM-O, 031833Z Dec 97, subject: MAM, TACOM-WRN Control No. MAM-98-001, U.S. M1A2 and FMS M1A2 tanks fire control systems test, NSN 2350-01-328-5961, LIN T13305. Summary: A gun turret drive (GTD) fault caution message may be erroneously displayed on the GCDP in some M1A2 tanks loaded with software versions U.S. 2.5A (and above), S2.2 (and above), or K2.4 when performing the fire control system test. This message provides the procedures for determining if the displayed fault is valid. POCs: Ms. Berniece Dubay, DSN 786-8215 (810-574-8215), dubayb@cc.tacom.army.mil Mr. Kevin Houser, DSN 786-5244 (810-574-5244), houserk@cc.tacom.army.mil
- AMSTA-IM-O, 191158Z Nov 97, subject: MAM, TACOM-WRN Control No. MAM-97-014, U.S. M1A2 hull electronics unit (HEU), NSN 2350-01-328-5964, LIN T13305. Summary: A HEU critical fault message may be displayed on the DID and CID when large fuel level changes occur in the tank. If this problem occurs, the TEU will take over the HEU functions and the tank will continue to operate in TEU only mode. This message provides the procedures for trouble-shooting and clearing the critical fault message and restoring the tank to operate with both the HEU and TEU. POCs: Ms. Berniece Dubay, DSN 786-8215 (810-574-8215), dubayb@cc.tacom.army.mil and Mr. Ray Verdaglio, DSN 786-8220 (810-574-8220), verdaglr@cc.tacom.army.mil
- AMSTA-IM-O, 122023Z Nov 97, subject: MAM, TACOM-WRN Control No. MAM-97-013, M1076 Palletized Load System (PLS) Trailer, NSN 2330-01-303-5197, LIN T93761. Summary:

TACOM received a report of a PLS trailer drawbar that broke off during normal operation. The cause of the break was attributed to improper operation and an improper repair to the drawbar sliding tube/mounting plate. This message directs users to inspect the drawbar for obvious damage, missing parts, or cracks. If the drawbar has damage, missing parts or cracks, the drawbar must be properly repaired or replaced. POCs: Mr. Patrick Baucom, DSN 786-5169 (810-574-5169), baucomp@cc.tacom.army.mil and Mr. Jeffery Hamel, DSN 786-5220 (810-574-5220), hamelj@cc.tacom.army.mil

- AMSTA-IM-O, 271126Z Oct 97, subject: MAM, TACOM-WRN Control No. MAM-97-012, M1A1 Abrams, NSN 2350-01-087-1095, LIN T13168, and M1A2, NSN 2350-01-328-5964, LIN T13305. Summary: A recent field survey has shown that in a number of instances, the NBC tube assembly located in the crew compartment NBC system, which runs from the NBC filter support assembly to the inside hull wall, is cracked and leaking air. This message provides inspection criteria and replacement procedures for this hose. POCs: Mr. Brad Voss, DSN 786-7389 (810-574-7389), vossb@cc.tacom.army.mil and Ms. Berniece Dubay, DSN 786-8215 (810-574-8215), dubayb@cc.tacom.army.mil

- AMSTA-IM-O, 081516Z Oct 97, subject: MAM, TACOM-WRN Control No. MAM-97-011, Turret Remote Switching Module (TRSM), NSN 6130-01-448-1840. P/N 12932230-2, used on the M1A2 Abrams, NSN 2350-01-328-5964, LIN T13305. Summary: Currently the DSESTS does not recognize the new TRSM part number

12932230-2. To completely test this TRSM with the current DSESTS, the old part number 12932230 has to be entered in prior to testing. This message provides an interim testing procedure for the TRSM to be used until the DSESTS update is issued to the field in March 1998. POCs: Ms. Berniece Dubay, DSN 786-8215 (810-574-8215), dubayb@cc.tacom.army.mil and Mr. Ray Verdaglio, DSN 786-8220 (810-574-8220), verdaglr@cc.tacom.army.mil

CECOM SOUMs and GPMs

- AMSEL-SF-SEP, subject: GPM 97-015, ST-138/PRC25 Electrical Equipment Harness, NSN 5820-00-892-8094. Remarks: Do not use the subject harness with the AN/PRC-199 radio. The approved carrying case for the AN/PRC-119 is NSN 5820-01-322-3477. Additional user actions are provided. Status: Open. POC: Mr. David Kiernan, DSN 992-0084, ext. 6447.

- AMSEL-SF-FB, subject: GPM 97-016, Follow up to GPM-97-014, Generator Set, Diesel, 2 KW, 120V AC, manufactured by Mechron, MEP-531A, LIN Z31804, NSN 6115-21-912-0393. Remarks: Replaced present duplex convenience receptacle with ground fault receptacle to be provided by PM Mobile Electric Power in the form of upgrade kits. For assistance, contact the message technical POC. Status: Closed. POC: Mr. Gaines Ho, DSN 654-2093.

- AMSEL-SF-SEP, subject: GPM-97-017, BA-5590/U, Lithium Sulfur Dioxide Batteries manufactured by SAFT. Remarks: Deadlines BA-5590/U batteries manufactured by SAFT America Inc. Status: Open. POC: Mr. Philip Klimek, DSN 992-9723, ext. 6437. ♦

POV (Passenger Occupant Vehicle) accidents, injuries, fatalities

UPDATE THRU MAR FY98

95/34
25/16
13/6
4/0
OTHER 1/0

TOTAL FATALITIES 56

INCLUDES TRACTOR TRAILERS, UNKNOWN POVS AND BICYCLES.

U.S. ARMY SAFETY CENTER

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Burt S. Tackaberry

Burt S. Tackaberry
Brigadier General, U. S. Army
Commanding Officer

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COUNTERMEASURE

VOL 19 NO 6

<http://safety.army.mil>

JUNE 1998

POV update
POV FATALITIES
43
65
THRU APR FY 98
THRU APR FY 97

Readiness

Whether driving a HMMWV, vacationing, or playing off-duty sports—a risk-management program must be integrated into the training of every soldier to reduce accidents. This results in more soldiers and equipment on the job instead of in hospitals or maintenance facilities. Add it up: Less means more because fewer accidents result in more training, increased resources—thus greater readiness.



POV accidents remain the number-one killer of soldiers: As of 30 April this fiscal year, 65 soldiers have died in POV accidents—8 of them on motorcycles. Speed was a factor in most of the POV accidents, and fatigue figured into many of them. Losing soldiers in POV accidents is a tragedy felt across the Army and one we cannot afford.

—BG Burt S. Tackaberry, CG, U.S. Army Safety Center

Director's corner



Risk management. Two small words with big meaning in today's Army. For officers and noncommissioned officers at all levels, it's a word not to be ignored.

Why the emphasis on risk management? Why all the posters, slogans, and programs to improve Army safety? Why should you be concerned?

The answer to all three questions can be summarized in one word--readiness. Accidents detract from Army readiness. That in turn affects the Army's ability to deter war ... and the Army has an important job in that respect. Thus, the cost of accidents can spread far beyond just dollars and cents.

We must realize the true cost of our safety failure--the drain it creates on our wallet and on our readiness.

From a purely money standpoint, the cost is enormous. In Fiscal Year 1997, for instance, reported accidents cost the Army more than \$134 million. And that is just the direct costs of Army personnel injuries and damages to Army property. The indirect costs--including injuries and damages to non-Army personnel and property, claims settlements and damage awards--would push the figures even higher.

The result of course is a significant drain on Army resources. Money that might be better spent improving training, weapons, and equipment is instead spent in the accident area. Money that could go toward increasing the readiness of our forces instead gets lost in a

jungle of injury costs and repair bills. The Army has excellent equipment and support, is well trained and ready to accomplish its global missions, and is building for the 21st century. Better risk management programs will strengthen those areas even more.

However, that loss of hard cash is not the only hindrance of readiness caused by accidents. The personnel time lost due to injuries means soldiers are not available for training ... not available to do their jobs ... not available to fight if necessary. It means extra time to recruit and train soldiers who must replace those killed or seriously injured in accidents.

Then there's the purely humanitarian aspect of risk management. The concept that the Army "takes care of its own" enters the picture here. Caring for the Army family must include providing people, to the greatest extent possible, a safe environment and safe working conditions. The Army may have some inherent dangers as a profession, but it does not have to be inherently unsafe. So the challenge facing Army leaders is to achieve maximum readiness without sacrificing the safety of soldiers or equipment.

Risk management is important in today's Army. ♦

BG Burt S. Tackaberry, Director of Army Safety

FY97 Totals

Personnel Injury	2.27 (1,328)
POV	0.75 (437)
Military Vehicle	0.52 (304)
Ground & Aviation	3.91 (2,287)
Total Army Costs	134M

It's a family thing

We are America's soldiers. We are drivers, mechanics, aviators, nurses, clerks, crewmembers, and DACs. We are also sons, daughters, brothers, sisters, fathers, and mothers. We are family...Army family.

As of 30 April, 65 soldiers have died in POV accidents this fiscal year. This irritates me. What can we do? What can the Army family do to help keep our soldiers from killing themselves? Is there a magic formula or special super powers to protect our soldiers? No, there isn't. If such a thing were possible, we would have done it already. We just have to work with what we have.

There are a lot of tools available to keep soldiers safe. It could be the very best tool in the Army--but if soldiers don't know about it, don't follow it, or don't know how to use it--it becomes a waste of time, and safety will suffer.

The *Leader's Guide* is a great tool if it is used. It can be accessed via the Army Safety Center website: <http://safety.army.mil/toolbox.html>. It shows leaders how to look at a situation and figure out what actions to take to reduce the risk. The *Leader's Guide* can't make certified accident investigators out of everybody, but it can offer another perspective and disclose other POV accident cause factors that haven't been thought of before.

Most things don't happen purely by chance. We know when there's an undisciplined member in our unit family, it's never a secret. We talk. But do we care? Do we care enough to do the right thing and report our brother or sister? That's tough to do, but it's not as tough as

looking down into a coffin and know we could have done something earlier to have prevented this tragedy and saved our brother's life.

I know how easy it is to look back and figure out how you could have prevented an accident. Yes, hindsight is 20/20. What I would like to see happen is for leaders to use the *Leader's Guide* in conjunction with the *POV Toolbox (2d edition)* and

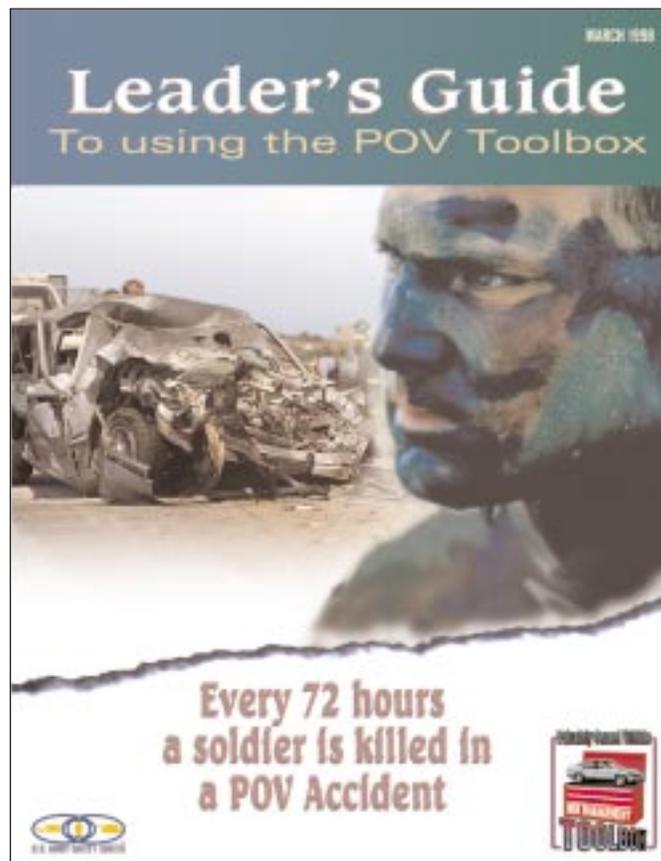
look at their current situation and apply the same analyses. These tools can help prevent accidents if used. Take an active role in preventing accidents from ever occurring. Turn it around. Turn hindsight into foresight.

There are three sections in the *Leader's Guide*. The first is a series of vignettes that are drawn together from the facts of different accidents. They are similar to accidents that have happened in recent memory. The second section is a series of scenarios that show probable situations that you could find yourself in. They are not great works of fiction, there is no need to alert the Pulitzer Prize

Committee. They are simply something for you to think about. You might not be in the same situation, but you may experience a similar circumstance. The third section is a series of slides that you can present to your soldiers or to anybody else who will listen--we'll take all the help we can get.

We must watch out for our family. To just stand by and watch one of our own endanger himself and others is a violation of the special trust and responsibility we have as members of the Army family. We must care. We must act. It's a family thing. ♦

POC: Mr Al Brown, Ground Systems Division, USASC, DSN 558-2534, brownj@safety-emh1.army.mil



Sports injury prevention

Key to combat readiness

We all know that physical readiness is a vital part of Army life and critical to combat readiness. Participating in sports and recreational activities, as well as physical training, is the most popular way soldiers can choose to maintain physical and mental fitness, as well as build esprit de corps. Unfortunately, it's not all fun and games.

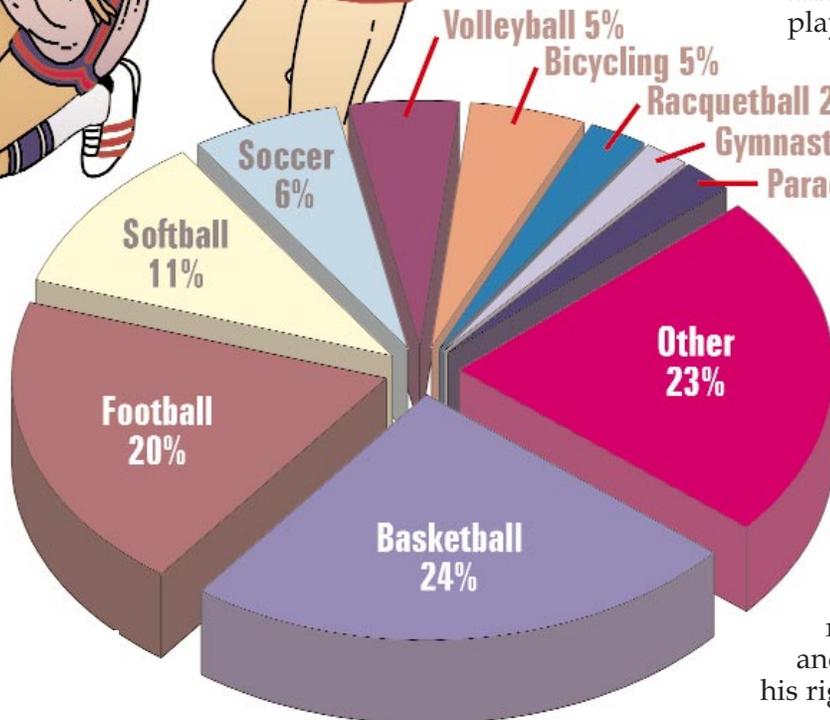
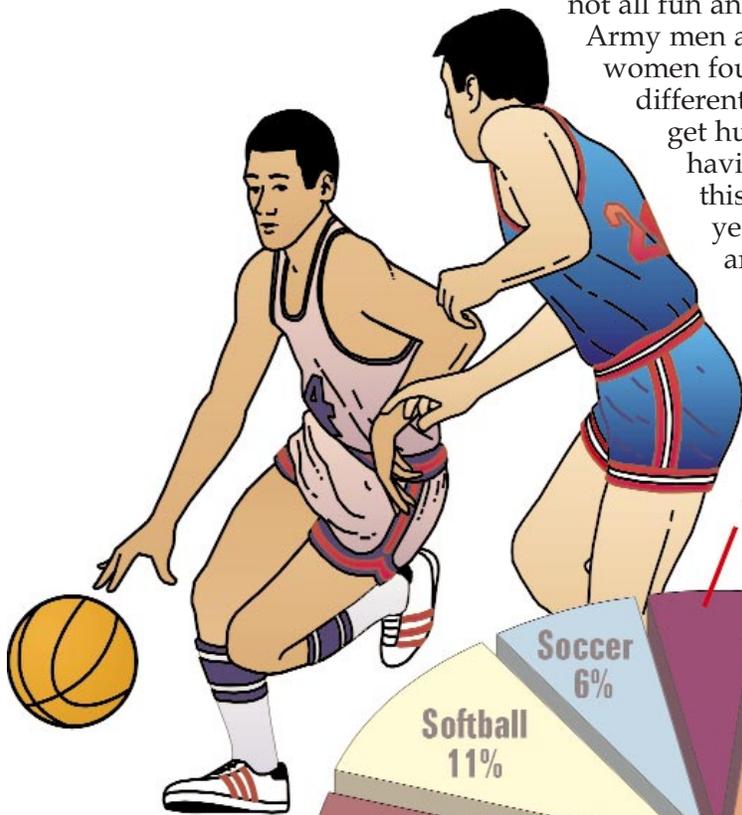
Army men and women found many different ways to get hurt while having fun this fiscal year. Here are some examples:

- A soldier was riding his

mountain bike along an unimproved dirt road. As he was descending a hill, his front wheel slid into a deep rut on the left side of the roadway. His wheel turned sharply, dug in, and stopped the bike suddenly. The soldier flipped over the handlebars and landed in the road 15 feet down the hill. Although conscious, the soldier was unable to walk due to the injuries sustained to his spinal column. The soldier laid in place for approximately 45 minutes awaiting a passerby and finally forced himself to crawl for help using only his upper body. After crawling 680 meters, he was observed by three soldiers working at a nearby motor pool. An ambulance was called and the soldier was transported to the hospital, where it was determined that he had suffered a broken back and compression of the spinal cord. The soldier was wearing a helmet and all other required safety equipment at the time of the accident.

- Three off-duty soldiers were playing a pick-up game of basketball at a local gym. One of the soldiers was on a breakaway and went for a layup. He came down on his foot wrong and it caused his knee to buckle, tearing his patellar tendon.

- A soldier was playing basketball during off-duty time at home. He jumped for the basketball and when he landed, his right foot twisted inward and then outward, injuring his right ankle.



■ A soldier was participating in a Rugby match. As he was tackling his opponent, their legs became entangled and the soldier fell to the ground, fracturing his left fibula. An ambulance transported him to a local hospital emergency room.

Sports and recreational accidents rank third behind privately owned vehicle (POV) accidents and combat soldiering as a major cause of accidental injury. When soldiers are injured, that directly impacts the Army's ability to accomplish its mission. What is the solution to reducing sports injuries? Is it to stop participation in athletic activities? Should we allow only certain people to participate in contact sports? The answer is "no" to both questions. Most sports activities involve a small element of danger: physical exertion, physical contact, and quick decisions followed by fast action.

Through mid-year FY98, there have been 142 sports-related accidents. That's the bad news. The good news is that the numbers have been steadily decreasing each year. Twenty-four percent of the sports-related accidents involve playing basketball. This is followed by touch football, softball, and soccer. The causes of injuries were mostly sprains and strains.

FM 21-20: Physical Fitness Training outlines the principles of exercise. These principles are important for developing an effective physical fitness program. A structured program, in conjunction with proper equipment and good leadership, can minimize the risk of soldiers sustaining injuries.

A soldier's main job is to be able to function well in combat. It is the leader's responsibility to make sure his soldiers are prepared at all times. There is no single or simple solution to prevent sports injuries, but they can be reduced. Leaders must be familiar with the hazards associated with sports activities and ensure their soldiers: (1) warm up before participating in any sport, (2) master the techniques of the sport, (3) stay in good physical shape, (4) be adequately equipped, and (5) know and practice the safety rules of the sport.

Effective leadership is a critical factor in the success of a good physical training program. We, as leaders, must emphasize the value of physical training, clearly explain the objectives and benefits of the program, and demand that it be accomplished to standard. It is important that the Army stays physically fit and prepared to complete their mission.

Combat readiness is the responsibility of not only the unit leaders, but the entire Army family! We must be fit in body and mind and ready to fight on the battlefield.

Be smart—play safe! ♦

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Sporty Safety Tips

Use these 5 safety tips to help reduce the hazards and prevent injuries when participating in sports activities.



1. Warm up before participating in any sport.
2. Master the techniques of the sport.
3. Stay in good physical shape.
4. Be adequately equipped for the sport.
5. Know & practice the safety rules of the sport.

Always Play it SAFE!

A safe vacation is no accident

You need a vacation? Why not, you've earned it. Even though you'll be taking some time off from work, remember not to take "time off" from safety. Playing it safe while on vacation can help you and your family avoid accidents and injury while getting the rest and recreation you deserve. Playing it safe means preparing for your activities ahead of time and using common safety sense.

Summer vacations are so important that we start planning for them months in advance. As the weeks click off and departure day nears, we start fretting about the long-range weather forecasts, we review the road map for any possible shortcuts, and we make the necessary reservations. We plan our vacation to the max, but before gathering up the family and heading off, consider these tips:

- **Pack a first-aid kit.**

Whether one is traveling to a nearby park or the distant mountains, it's wise to include a well-stocked first-aid kit. The kit should contain: bandages, sterile gauze, adhesive tape, scissors, an elastic bandage to wrap a large wound, acetaminophen, a thermometer, medicated ointments, tweezers, calamine lotion, antiseptic soap, hydrogen peroxide, hand towels, a small flashlight, and important telephone numbers. A few other things that need to be packed are insect repellent and medication for motion sickness, nausea, diarrhea, and upset stomach.

- **Check your wheels.** Mechanical malfunction inevitably rears its ugly head on long trips. Glitches in essential items such as steering and braking can be dangerous. Also inspect belts, hoses, battery, and lights.

Prepare for road contingencies as well. Be sure your spare is inflated and in place. Pack extra belts, hoses, fuses, spark plugs, windshield

wiper blades, and oil. Also, bring some basic tools and a fire extinguisher.

Don't forget the things you can get arrested for not having: driver's license, insurance card, and vehicle registration.

- **Transportation along the way.** Plan your route carefully. Wear seatbelts. It's the best piece of advice for anyone on the highway.

Don't drive when tired or under the influence of alcohol or drugs. Stop and stretch or relax every two hours or 100 miles. If possible, that's a good time to change drivers. Drive defensively, anticipate the actions of other drivers. Drive the speed limit and obey road signs.

If one is traveling on public transportation: Do not sleep on trains, buses, or in taxis. Do not travel into an unfamiliar area alone, especially at night. Don't get so engrossed reading the current thriller that you jeopardize your own safety. Stay alert! Sit close to the driver. Do not sit near exits, where one is an easy target for quick-hit thieves and purse snatchers.

- **Beat the heat.** Except for the cold, heat kills more people than any other natural hazard, and that includes hurricanes, tornadoes, floods, and earthquakes. Restrict strenuous activities to the coolest part of the day. Avoid direct exposure to the sun between 1000 and 1500, when the sun's rays are the strongest. Use a sun screen with a sun protection factor rating of at least 15 for skin protection. Wear loose-fitting, lightweight and light-colored clothing that reflects the heat and sunlight. Drink lots of water during and after strenuous activity (even if you don't feel thirsty). Wear sunglasses that block ultraviolet rays.

- **Bugs that bite.** To help control pesky insects, such as mosquitoes, bees, and other stinging insects--wear insect repellent. Don't wear bright-colored clothing. Don't use cologne



or scented cosmetics, especially floral. Avoid rapid movements that look like attacks. If you happen upon a nest--move away slowly. Don't eat or drink sweet things outdoors; they attract insects like a magnet. If you are stung by an insect and begin to experience hives, stomach pains, diarrhea, dizziness, chills or facial swelling (regardless of where you may have been stung), you are more than likely having an allergic reaction. Seek immediate emergency medical help.

● **Leave snakes alone.** A favorite summer activity is a hike in the woods, but beware of snakes. Keep hands and feet out of areas you can't see. Don't pick up rocks or firewood in snaky areas. If one is bitten, wash the bite with soap and water, immobilize the bitten area and keep it lower than the heart, and get medical help at once.

● **Leaflets three, let it be.** Poison ivy, poison oak, and poison sumac are the three most common poisonous plants. The key to protection is the ability to recognize and avoid

the plants that carry the poison. Both poison oak and poison ivy have three-leaflet stems. The two-side or lateral leaflets appear to be symmetrical and they grow close to the stem while the end leaflet is distinct and alone. Poison sumac can have seven, nine, eleven, or thirteen leaflets; these also grow in symmetrical pairs close to the stem—except for the one at the end. Take extreme precautions to prevent direct or indirect contamination. Wear trousers tied at the boot mouth, a long-sleeved shirt, and gauntlet-type gloves to prevent contact.

● **Homeward bound.** Now, let's get home safely. Don't try to complete a long drive on the last day. Sure you want to get home, but more importantly, you want to arrive safely. Drive part of the way the day before and spend the night. On the last day, sleep late and arrive relaxed.

A vacation trip requires more effort than just turning the key and heading out. Prior planning will keep things running smoothly and safely.

Ahhhhh, home at last—safe and sound.....

Don't get tick sick

This winter has been filled with rain and mild weather. What we may consider a nice break from freezing weather has been a delight to the deer tick population. When rainstorms prevail in place of snow, the ground stays moist, as do woods, weeds, and other tick habitats. A freeze usually takes care of ticks for the season, but they haven't been disabled by this year's weather, and are catching rides inside homes on pets and people.

Deer ticks are pesky because of their association with Lyme disease, an infection resulting from a transmission of a bacterial or viral agent through a tick bite. Lyme disease often begins with an expanding red rash at the site of the bite within a month. Other symptoms include fatigue, headache, neck stiffness, jaw discomfort, pain or stiffness in muscles or joints, slight fever, swollen glands and conjunctivitis. Symptoms are similar to the flu, vague until they manifest as complications such as meningitis.

In some stages, deer ticks are as minute as a dot from the point of a sharp pencil; others are noticeable. They wait on grasses, leaf litter

or bushes, and attach themselves to birds, animals or humans. They do not jump or fly.

Although fewer than 20 percent of ticks carry disease, help prevent tick bites by avoiding tall grass, leaf litter and bushy undergrowth. Wear appropriate clothing, such as a tucked-in shirt with snug collar and cuffs; long pants tucked into socks, and good boots. Wear light-colored clothing to make ticks easy to see. Repellents on skin and clothing help reduce the risk of a tick embedding itself. Read warning labels on containers and follow directions to avoid a possible poison hazard. Monitor yourself, children and pets immediately after coming inside and inspect clothes. Remove attached ticks by using fine-pointed tweezers. Following removal, wash your hands and apply antiseptic.

If you experience flu-like symptoms within a month after being bitten by a tick, contact a doctor immediately. The disease is treatable with antibiotics. Be cautious. **Don't get sick from a tick! ♦**

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A shot in the dark

It was the last CALFEX of over twenty iterations. The battalion task force had conducted extensive training and preparation all the way down to the soldier level. The winter night air was cool and a damp mist had settled above the ground. The translucent clouds hung low and let the moonlight shine through overhead. The live-fire range was well beaten with miles of footprints dug into the sandy soil. Pieces of what used to be targets barely stood in the shadow of the horizon. The trench-line bunker system was well-riddled with shrapnel and sweat from weeks of hard training. The night of ENDEX had finally arrived. One more time through the breach. One more time through the trench. One more time through the network of steadfast bunkers. One last time—and it would all be over.

The mission was the same. A battalion task force minus, comprised of two company teams with an attachment of engineer “sappers,” was to conduct an attack on a multi-bunker complex surrounded by a trench line and concertina wire. One company team was to occupy a “support-by-fire” position on high ground overlooking the trench line from the north. The other team, augmented with the engineers, was to clear a portion of the wire obstacle to the west of the bunker system to allow the assault element to

breach the wire and attack the objective.

From a distance, the familiar whine of UH-60 Blackhawks approached ever so vigilantly over the treetops. The wet leaves sprayed a fine mist as the rotors passed within what seemed like inches of the trees. On the still ground below, the sand awoke and began to fly in all directions. The Blackhawks settled into the LZ and unloaded a task force worth of highly-motivated soldiers. The teams began to move out to the objective. In their familiar wedges, they lightly rustled through the underbrush as they made their way to their positions.

The main support-by-fire element assumed its position roughly 380 meters north of the trench line. The brisk night air was overcome by the adrenaline running through each soldier’s veins. The enemy was less than 500 meters away. The local support-by-fire position set up to the west of the main support-by-fire position which had already commenced to firing on the westernmost part of the objective. They, in turn, commenced to unloading with machine gun fire on the westernmost bunker. The glow of rifle barrels began to get brighter as ball and tracer ammo pierced the night air. The smell was unmistakable. Expended rounds and hot metal excited the senses of each and every rifleman.

All the while, an assault element had made its way around to the west side of the range and

assumed a secure position 100 meters away from the objective and behind a berm. The Infantry platoon and the sapper team were eager to get to the objective. They had trained on this mission to near perfection. Sweat had already washed half the camouflage off their faces and down onto their soaked undershirts. This was their last chance to catch their breath before attacking the objective with all the vim and vigor they



MISSION: COMPANY COMBINED ARMS LIVE FIRE EXERCISE (CALFEX)

Hazards:

- Live Fire Night Operations
- Explosive Mean Safe Distance Limits
- Multi-direction Small Arms Firing

Result:

- Weapon(s) fired out of sector
- 1 Fatality -- Soldier killed by small arms fire

Controls:

- Enforce rehearsal requirements
- Strict compliance with range and unit SOPs
- Active leadership in all phases of operation
- Use of personal protection devices

CALFEX-6

were trained to exude.

The sappers approached the wire. This was the cue for fires to shift to the east, away from the breach site. Gunfire could be heard above everything else. The range lit up with streaking tracers. The ball ammo hissed and pinged as they shot downrange. You could hear the rounds ricocheting off pickets of the concertina wire. Dirt was flying in all directions. Targets were shattering from rounds penetrating their steel bodies. To the untrained observer, it would seem like hell unleashed.

Unaffected by the events surrounding them, the sappers crawled up to the wire with their bellies sliding against the cold wet sand. They assessed the best place for the breach and prepared the bangalore torpedo. Two sections of high-explosive pipe were joined together and pushed under the wire. The detonation sequence was started and the sappers returned to the berm to take cover.

The blast shook the whole range. Sand and debris flew in all directions. The sappers returned to the freshly formed opening in the wire and began to proof the breach. As they began marking the lane with chem lights, rounds were still being fired from the support-by-fire positions toward the westernmost bunker. They had not shifted fires. Unaffected by this, the sappers continued the mission. The lane was proofed and the assault element approached. Hearts were pounding and the adrenaline was pumping. The focus: assault the trench and take out the bunkers. Everyone concentrated on their piece of the action. As long as they did their part and completed their task, the mission would be a success.

But, the lead team stopped before the breach. Something was not right. The team leader observed rounds being fired over the road that traveled north/south between the wire obstacle and the trench line. There were rounds impacting the road and hitting the pickets in the concertina. He took a knee and thought to himself that these rounds were clearly out of sector and that the support-by-fire position had not shifted fire as planned. There were sappers at the breach and a team of far-side security on the other side of the road. He quickly relayed up the chain "they haven't shifted fire, they haven't shifted fire!" The company commander then called for a shift fire and fired a star cluster (the back-up signal to shift fire).

The mission had to continue. They had done this many times before and seeing rounds at close range was normal, especially at night. Rounds always seem closer than they actually

are. . .so they say.

The sappers were in the prone at the breach. The assault element bounded through the breach and entered the trench. The first grenade exploded in the first bunker with a muffled, yet lethal crack. On to the next bunker.

Meanwhile, the sapper squad leader made his way back to his sappers at the breach. They were to get up and move to a reconsolidation point and maintain a southern security. He got the trooper at the north side of the breach and made his way to the trooper at the south side. He tapped him on the soles of his feet to get his attention. No response. He reached down and pulled at him at the shoulder. As he turned him over, he realized that he was lying in a pool of his own blood. He had been fatally wounded. Cease fire was called.

This accident was indeed a tragedy. However, like most accidents, it was avoidable. Live-fire exercises of any type or size are inherently dangerous and should be given all the preparation time and respect they deserve. As was in this case, the planning and preparation was outstanding. Leadership involvement from the battalion commander on down to the individual soldier was the key to the previous successes of this series of CALFEXs. But, even the best laid plans are subject to intangibles.

In this case, it was determined that rounds were clearly being fired out of sector. Two separate actions had an impact on the resulting fatality and both were leadership failures. The first action was that an undetermined rifleman fired out of sector. For this to happen, a first-line supervisor had to have failed to properly supervise a soldier while that soldier was firing. Second, no "cease fire" was called when rounds were observed out of sector. More than one individual observed rounds out of sector, including soldiers in leadership positions. The soldiers had been overcome by the "hooah" factor and had conducted this type of operation so many times previously that they became somewhat complacent about the proximity of the impacting rounds. Army Regulation 385-63 and universal range safety policies incorporated into all local range-firing SOPs require that out-of-sector firing, as well as any unsafe act, should be stopped immediately by calling "cease fire."

Remember, everyone is a safety officer and the action of calling for cease fire can originate at ANY level. ♦

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Tree crushes ground guide

There have been 33 accidents since FY 95 that are directly related to improper ground guiding procedures. Over half of these accidents were caused by the ground guides not being properly located. Six of these accidents involved tracked combat vehicles of which four resulted in fatalities. The following is an account of one of those fatal accidents.

Mission: During a night tactical operation, one tank platoon was ordered to support another tank platoon under attack.

The main body of the unit had occupied the new assembly area and was in a defensive position by 1600. One tank platoon had remained behind and was still located at the old assembly area. At approximately 1900, this platoon came under heavy enemy attack and requested support and an escort to guide them into the new assembly area. The executive officer gave the mission to a tank crew that consisted of an experienced tank commander (TC) and driver, and another soldier as loader who had been attached to the unit for less than 24 hours. This soldier lacked experience as an M1A1 tank crewmember and had received no

formal training prior to this exercise.

The entire maneuver area had become saturated from the week-long heavy rainfall and the tactical operations area was very heavily vegetated. The crew soon realized that they were going to have problems as they immediately knocked down one tree and struck another as they began their mission.

There was near zero illumination due to the inclement weather and fog. As the crew departed the assembly area, the driver attempted to use the old second-generation AN/VVS-2 night vision viewer and realized that it would be necessary to use the infrared lights to identify obstacles more clearly. This particular tank had a mine plow attached with mounting brackets situated in front of the infrared lights. When the driver turned on the infrared lights, they reflected off the left and right mounting brackets causing the night periscope to wash out. Therefore, the infrared lights were not used to assist the driver in maneuvering the vehicle through the assembly area.

The TC also chose not to utilize his AN/PVS-7B night vision goggles and left them in the cupola. Instead of using the latest and best image intensification technology, they chose to use a flashlight with red lens and a chem light.

The TC ground-guided from the front of the vehicle and the loader from the rear. After they successfully turned the vehicle around and negotiated the last turn, it was a straight shot to

INDIVIDUAL FAILURE

MISSION:

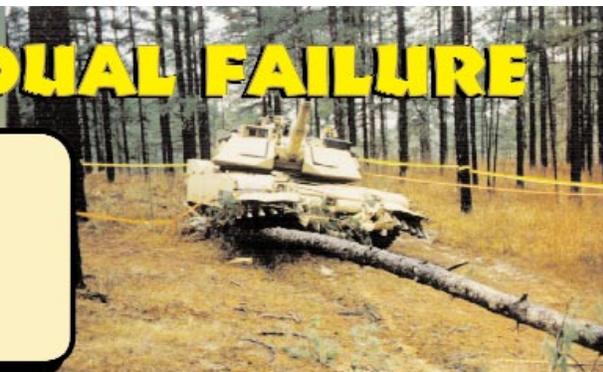
Escort tank platoon to new assembly area

RESULT:

1 fatality

Contributing Factors:

- Ground guide (TC) was too far in front of the vehicle to check for proper clearance
- TC never checked vehicles movement
- TC failed to utilize night vision goggles IAW TACSOP
- Use of two ground guides in front of vehicle
- Driver unable to use AN/VVS-2 because of mounted mine plow
- Near zero illumination



the tank trail.

With no pre-planned withdrawal route and the assembly area not having a designated exit, the TC and loader started walking toward the tank trail, expecting the driver to follow behind them. Coincidentally, both the TC and the loader decided to position themselves in front of the vehicle. The two were not facing the vehicle, therefore allowing themselves to get too far forward of the vehicle (about 55 feet). From this position, neither one was able to monitor nor correct the vehicle for proper clearance.

At some point, the TC and the loader decided to change lights with each other. Subsequently, the driver became confused as to who to follow. Not long after this, the driver felt the right track rise and saw two lights hit the ground. The vehicle had struck an 80-foot tree causing it to fall forward, landing on both the TC and the loader. The TC sustained fatal injuries.

Summary

Because of his experience, the TC was confident in his ability to ground guide his vehicle through the assembly area in near zero visibility without the use of night vision devices. He allowed himself to get too far in front of the vehicle where he was unable to monitor and correct for proper clearance in accordance with AR 600-55, AR 385-55, and TC 21-306. There were also two ground guides in front of the vehicle which caused the driver confusion as to which guide and signal to follow. In addition, the driver could not have seen the tree due to a limited field of view and limited visual acuity while using the AN/VSS-2 night periscope.

The hazards were not identified or assessed before initiating this mission. They were conducting night operations in near zero illumination. The assembly area was heavily wooded with no defined entrance, routes, or exit. The crew did not have enough qualified personnel to safely ground guide the vehicle through the assembly area. The ground guides were not properly located to safely guide the vehicle.

Controls: The following controls can be found in AR 385-55, Prevention of

Motor Vehicle Accidents; AR 600-55, The Army Driver Standardization Program; TC 21-306 (Draft), Training Circular for the Tracked Combat Vehicle Driver and FM 21-306, Manual for the Tracked Combat Vehicle Driver. Hand and arm signals can be found in FM 21-60 and in soldiers' manuals.

- All tracked vehicles are required to have both front and rear ground guides while moving in an assembly area.

- Training centers and unit SOPs usually require TCs to be situated in their cupola prior to any vehicle movement.

- The ground guide's responsibilities are to make sure the route ahead is clear and guide the vehicle through danger areas and into position.

- The driver should keep approximately 10 meters between the vehicle and the ground guides, being sure to stay far enough away from them to be able to stop safely should they stumble or fall.

- In wooded areas, the ground guides should be far enough from the vehicle to avoid being hit by falling trees. Other personnel in the area should be warned of the dangers caused by moving vehicles. METT-T factors such as night operations and illumination should also be considered when determining the distance between the vehicle and ground guides.

- When using ground guides, always follow their directions. If a ground guide goes out of sight for any reason or signals are confusing—stop the vehicle immediately and wait for further guidance.

- Do not take signals or commands from more than one ground guide.

- If the vehicle is backing up, the front ground guide will relay any signals from the rear ground guide.

- Always use night vision devices in periods of low visibility or during night operations that involve vehicle movement.

- Entrances, routes, and exits in assembly areas should be marked or at least known by all personnel. ♦

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From the troops

Starting with this issue, a new Countermeasure section called, "From the Troops" will provide stories, news, information, and ideas from the field. Speak up! We know you have many stories to tell. By sharing your experiences—the what, when, where, how, and why of the accident that happened and the ones that almost happened but didn't—you can assist others who find themselves in similar situations. This is your chance to make a contribution to the Army in the critical job of conserving resources through accident prevention.

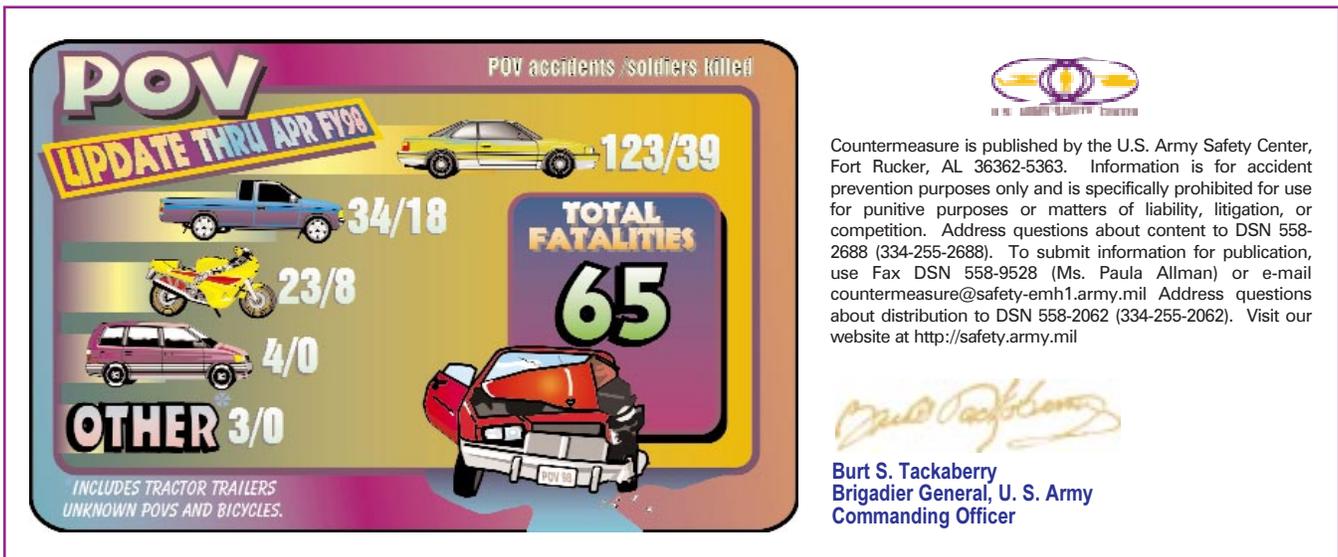
Don't worry if you haven't taken courses in creative writing. It's the idea that's important. We have a professional writer/editor who will review your story or article and work with you. Stories should be typewritten and double-spaced, and not exceed two pages. If you're not a typist, jot it down on whatever is available, but please make it legible. All stories may be edited for reasons of style,

accuracy or space limitations. Articles will also be reviewed by our legal department. Include your full name, rank, duty address, and phone number; we'll do the rest.

If you prefer to be anonymous, just tell us so; we'll respect your request; after all, it's the lessons learned that just might help a fellow soldier save Army equipment, or more importantly, a life.

The volume of letters we receive makes individual acknowledgment impossible; however, if published in Countermeasure, we will send you a letter from the Director of Army Safety with a personal copy of your Countermeasure article.

Articles can be sent to Commander, U.S. Army Safety Center, ATTN: CSSC-OG (Countermeasure), Bldg. 4905, 5th Avenue, Fort Rucker, AL 36362-5363. Articles may also be faxed to the attention of Ms. Paula Allman, DSN 558-9528 (334-255-9528) or send via e-mail to countermeasure@safety-emh1.army.mil ♦



Oops, we goofed!

If computers are so darned smart, why can't they change what you said to what you meant to say? In the April 1998 Countermeasure article, "Shortcut costly," we incorrectly described a rollover accident involving a FIST-V (M981) as an M577. We regret the mistake.

ARMY GROUND RISK-MANAGEMENT PUBLICATION

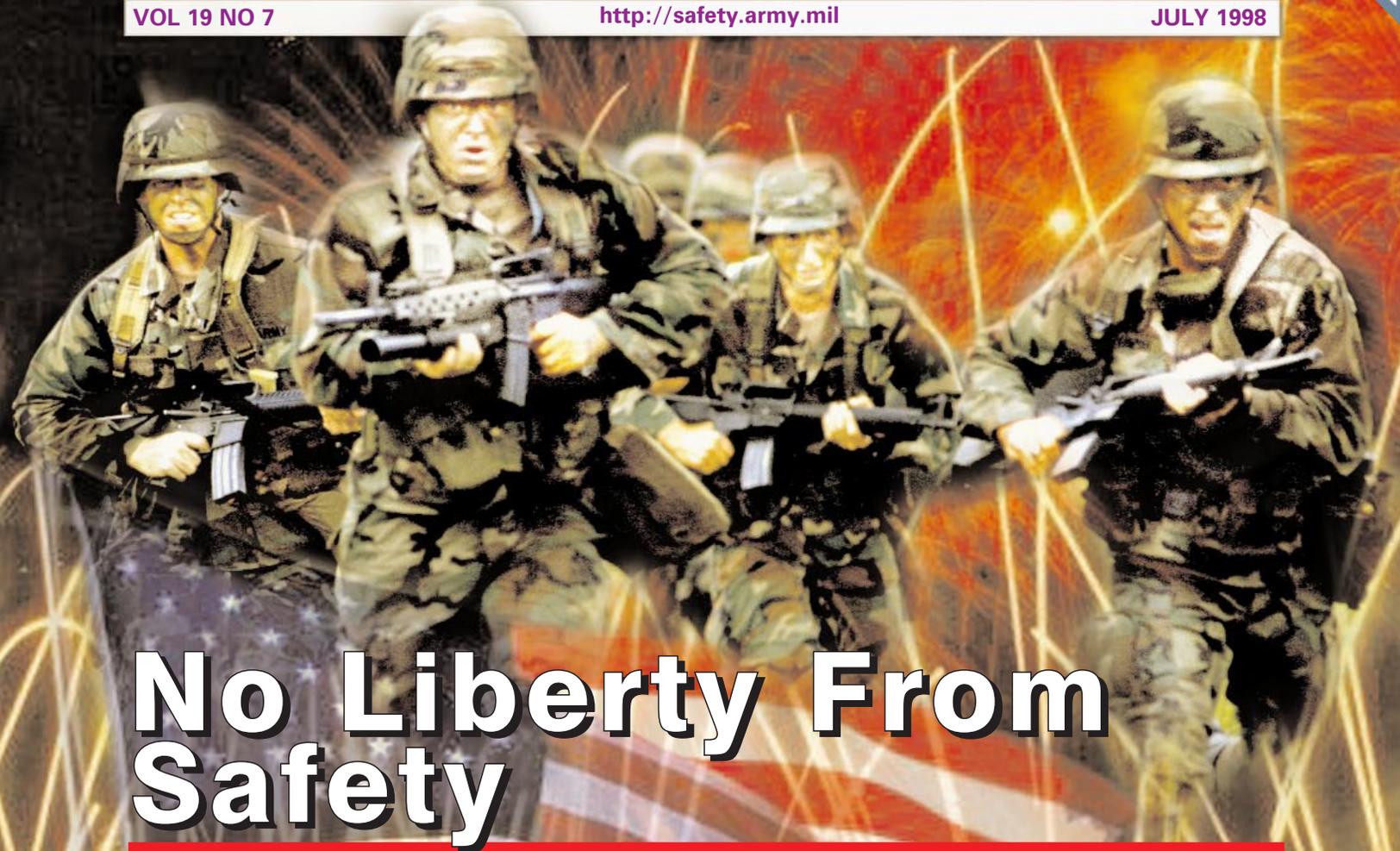
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JULY 1998

POV update
POV FATALITIES
80 THRU MAY FY 98
57 THRU MAY FY 97



No Liberty From Safety

Independence Day—a time when we Americans celebrate our rights and freedoms with friends and family. Don't let accidents and injuries put a damper on fun, be mindful of the inherent dangers of fireworks and pyrotechnics. Follow established safety procedures to make sure festivities are free from hazards, lest our tribute turns into tragedy.



Commanders and other leaders need to take note that POV fatalities are on an upward trend from this same time last year. What is your installation doing to reverse this trend? This is leaders' business at every level of our Army.

—BG Burt S. Tackaberry, CG, U.S. Army Safety Center

ARMY GROUND RISK-MANAGEMENT PUBLICATION
COUNTERMEASURE

**The Official Safety Magazine
 for Army Ground Risk-
 Management**

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Burt S. Tackaberry
 Brigadier General, U.S. Army
 Commanding Officer

Director's Corner



It's a fact of life—virtually everything the Army does involves taking risks. From flying helicopters, driving tanks, and working with explosives to working in an office, we deal with risk every day. This month, *Countermeasure* focuses on an extremely risky business—explosives.

Our explosives safety program is based on AR 385-64 and provides force protection guidance for commanders. It sets explosives safety standards to protect military and civilian Army employees, the public, facilities, equipment, and the environment.

I have stated before, "People make safety happen." As the Director of Army Safety (DASAF), I want to give you the tools necessary to be safe in all phases of your life—on duty and off. I want to develop a closer relationship between the U.S. Army Safety Center (USASC) and the businesses of explosives safety, occupational health, and environmental protection. This is important to the overall mission of the Army.

Explosives safety is a critical part of the Army Safety Program. We have had a very good safety record in the explosives area; however, we cannot afford to rest on our laurels. We must strive to improve it. The task of providing a safe and healthy workplace is one that requires dedicated effort from everyone. This includes not only supervisors and employees at the first level, but every manager and technical support person. Halfway measures have no place in a program that deals with the safety and well-being of our workforce.

Workplace safety and health programs, especially when explosives and other hazardous materials are involved, must be in-depth and based on good planning and execution. Whenever we experience an incident, people are often killed, disabled, or severely injured. The loss of a single person is unacceptable.

The responsibility for keeping a solid Army Safety Program in effect is not mine alone. Each of you owns a share of the program, and you must do your part with skill and dedication on a day-to-day basis—as I know you do. Nothing short of a total team effort will do, and I will do everything I can to help the team be successful.

—BG Burt S. Tackaberry, Director of Army Safety

Pyrotechnics

As part of a field training exercise, a unit was performing the task: “React to aerial flare with warning.” The flare was launched in a near-vertical attitude. But shortly after launch, it suddenly changed direction and headed toward a column of soldiers. After flying over 150 feet, it struck a soldier in the left side of the face, passed through the soldier's mouth, and exited the right side of the face. It then continued another 25 feet before stopping.

In another incident, a soldier took a simulator to his barracks room after a field exercise. The soldier was examining the device in his hands when he mistakenly pulled the igniter. When the device detonated, it left 2nd and 3rd degree burns on the soldier's face and hands.

During another exercise, a soldier, after finding a good position, started to improve its location to provide better cover and concealment. In the process of removing rocks and debris, the soldier unknowingly unearthed an antitank weapon effects signature simulator (ATWESS) that was left by a prior unit. When the soldier placed another rock on top of it, the ATWESS detonated. The soldier received 2nd degree burns to his hands.

Since the beginning of FY 96, there have been 36 accidents involving pyrotechnics – 39 injuries, over \$470,000 in injury costs, 408 lost work days, 159 days of hospitalization, and 882 days of performing in a restricted capacity.

These explosives accidents account for 46 percent of all explosives accidents in FY 96 and 44 percent in FY 97. So far in FY 98, one of five explosives accidents has involved pyrotechnics. Pyrotechnics include simulators (grenade, artillery, and mortar), booby traps, ATWESS, Hoffman Device, flares and signals. These devices rarely cause fatalities (2 in the last 10 years), but do result in an expensive loss of manpower.

Simulators and Flares. These devices were the most prevalent in all the reported pyrotechnic accidents (53 percent). The major errors were attributed to improper handling and unauthorized use. Causes for improper handling include: cooking off the device, improperly applying an electric current to the detonator, and picking up DUDs. Types of unauthorized use include taking them home, throwing them in the vicinity of other soldiers, and opening them and

igniting the powder. Other hazards caused by simulators are gravel, sticks and burning paper thrown from the explosions and detonations. The ‘safe area’ for personnel is 15 meters for grenade simulators and 35 meters for artillery simulators.

Booby Traps. The major problem with these devices is although they are similar to other simulators in appearance, they react differently when ignited. They can be easily confused by someone who is not familiar with them. Leaders must ensure that only trained soldiers handle these types of devices. These devices should never be activated by hand or placed by a fire hazard (dry grass or leaves). They can injure personnel within 6 feet. Do not use tape or wire when securing booby traps to surfaces, only nails.

ATWESS. The majority of these accidents involve handling unexpended devices. This device contains a magnesium photoflash compound and should be disposed of properly. Instead, they are often discarded by being buried or placed in MRE bags. Soldiers are injured by accidentally digging them up or picking them up during police call. Another problem is soldiers are in the back blast area. Never stand behind the ATWESS when it is being loaded, armed or fired. The ATWESS is also known to fire when dropped. In case of a misfire, place the arming lever to safe before removing the cartridge. If the primer is dented, return it to be disposed of properly. If it is not dented, repeat the proper loading instructions.

Hoffman Device. Like the ATWESS, this device contains a magnesium photoflash compound. It burns faster than gunpowder and generates extremely high temperatures. Over half of the accidents involving this device occur when someone attempts to disassemble, cut open, modify or hand ignite it. It is important that this device only be used for what it was intended. Personnel should stand behind this device at all times. Ensure there are no personnel within 50 feet when firing. Be sure to follow the misfire procedures exactly as shown in the instructions.

General guidelines for all pyrotechnics

- Wear appropriate leather safety gloves when handling these devices.
- Do not modify or tamper with any device.

- Never throw or point any device at people or equipment.
- Don't place any device near a fire or other heat source.
- Don't pick up any DUDs - Treat as Unexploded Ordnance (UXO).
- Never cook off the device.
- Never mix different types of pyrotechnics in the same container.
- Always read the instructions for each device.

Leaders can lower the risks of an accident occurring by setting safety standards for handling these devices through appropriate SOPs. There should always be positive inventory control to reduce tampering and unauthorized use. Leaders should ensure only trained personnel handle these devices. Avoid the UXO, send a spot report as fast as possible, and clearly mark the area.

Proper safety must be stressed at all levels of command. Safety briefings should cover instructions, demonstrations, and the dangerous

features of each device. Too many soldiers fail to realize that pyrotechnics are dangerous. They are not toys, firecrackers, or souvenirs. They are real, and they cause real injuries. There is no substitute for following correct procedures. Any deviations from these proven procedures can be catastrophic.

Publications dealing with pyrotechnics

AR 385-63, *Policies and Procedures for Firing Ammunition for Training, Target Practice and Combat*

AR 385-64, *Ammunition and Explosives Safety Standards*

FM 23-30, *Grenades and Pyrotechnic Signals*

TM 9-1370-206-10, *Pyrotechnic Signals*

TM 9-1370-207-10, *Pyrotechnic Simulators*

TM 9-1370-208-10, *Photoflash Cartridges and Surface Flares*

GTA 9-12-1, *Unexploded Ordnance Procedures*

POC: SFC Charles P. Olsen, Engineer Branch, Ground Systems Division, USASC, DSN 558-3034 (334-255-3034), olsenc@safety-emh1.army.mil

The Rockets Red Glare . . .

Ah, summer...blue skies, glorious sunshine, the sizzle of hotdogs on the grill, the laughter of children dashing through the sprinkler. The Fourth of July will soon be here—a time when we Americans celebrate our rights and freedoms with friends and family. The food, music, and camaraderie are great, but the highlight of the celebration would be missing without the fireworks.

We pay tribute to our country and founding fathers when we celebrate this national holiday with such fanfare. However, we need to be mindful of the inherent dangers of fireworks, lest our tribute turns into tragedy.

The safest way to enjoy fireworks is to leave the fireworks displays to the professionals. However, if you decide to have your own fireworks display, make sure they aren't illegal in your state or local area and use these safety tips to make sure your Independence Day is free from hazards:

- 🔥 Always read and follow instructions for each device.
- 🔥 Do not allow children to light fireworks.
- 🔥 Fireworks should only be lit outdoors, away from structures and any flammable materials.
- 🔥 Keep a water bucket or hose nearby for emergencies.
- 🔥 Do not modify, tamper, or dismantle fireworks or attempt to make your own.
- 🔥 Do not try to light fireworks that have malfunctioned (DUDs).
- 🔥 Do not throw or point fireworks at other people. Place them on the ground or a launch platform, light them, and get away as fast as you can.
- 🔥 Do not place or light fireworks inside a metal or glass container or near a heat source.
- 🔥 Store in a cool, dry place and out of sight of children.
- 🔥 Dispose of properly. Soak DUDs with water, pick up with a shovel, and throw away.

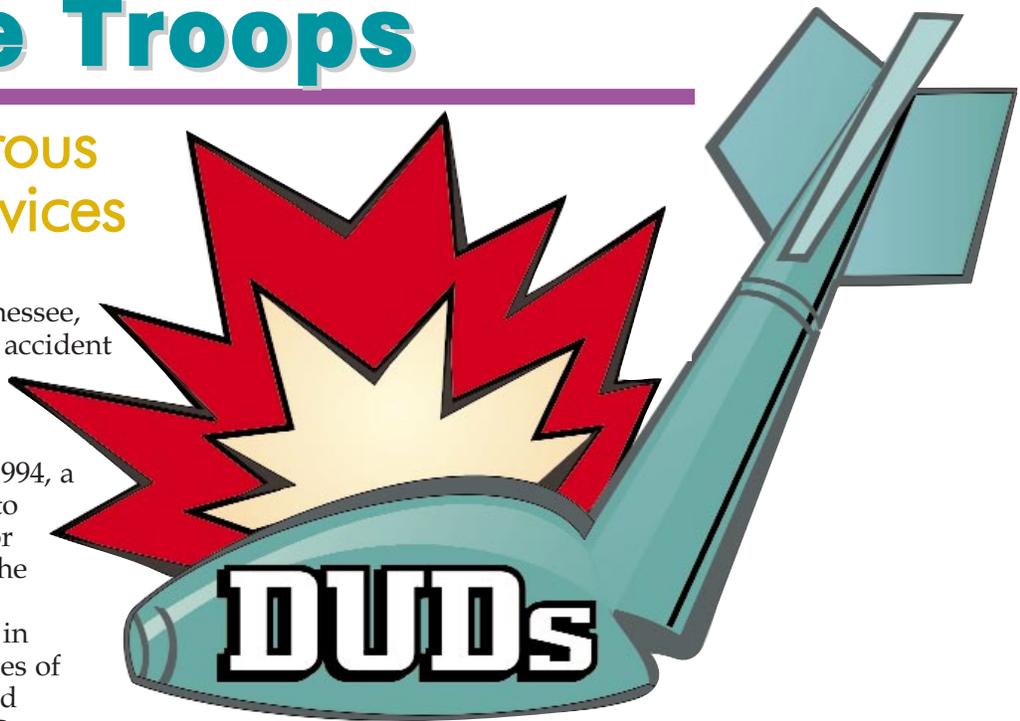
From the Troops

DUDs—Dangerous Unexploded Devices

In April 1995, Memphis, Tennessee, was the site of an explosives accident when two 40mm grenades (one high explosives and one smoke) detonated and left five children injured. In September 1994, a soldier was at home attempting to disassemble an artillery simulator when it functioned and injured the soldier.

What do those incidents have in common? These are two examples of explosives accidents that occurred because items thought to be DUDs were picked up as souvenirs or toys at active and inactive training areas and ranges of military bases. These items may appear insignificant, harmless, or entertaining. They are not. DUDs are explosives devices that have been fired, but have not exploded. Unexploded ordnance (UXO) of all types can be found on impact ranges and training areas. DUDs may be in areas adjacent to ranges and training areas. Grenades, blasting caps, illumination signals, simulators, and a host of other ordnance may not have functioned as originally intended. Picking up DUDs can cost a person a hand or a life. DUDs can explode at any time, especially if handled or moved.

There are many active and inactive training sites and impact ranges that are accessible to the public. Today military bases are often open posts. Visitors can travel in many areas without restrictions or escorts. Facilities that have closed may have former training ranges that still need to be cleared of UXO. Access



to these areas may be as easy as walking over an installation boundary. The training and impact sites may not be fenced and monitored on a continuous basis, but are usually well marked with signs. These signs warn of the dangers and forbid unauthorized entry. Often, these signs are ignored with devastating consequences.

One simple rule should be followed when a person finds a DUD. **DO NOT TOUCH!** If there is one DUD, realize that others may be in the area. Be careful when leaving the area. Contact the military police or fire department. Most military installations with an active training range have Explosive Ordnance Disposal (EOD) units who dispose of unexploded munitions. EOD personnel are often dispatched to locations where DUDs are found to help in disposing of the dangerous items.

POC: Mr. Richard Albrecht, U.S. Army Technical Center for Explosives Safety, Savanna, IL, DSN 585-8807 (815-273-8807).

Warn your personnel of the potential hazards of handling unknown objects on ranges, whether they look like DUDs or not. Be sure to include these warnings in range safety briefings, orientations for contractors and new personnel, and even see that notices are sent to installation family housing.

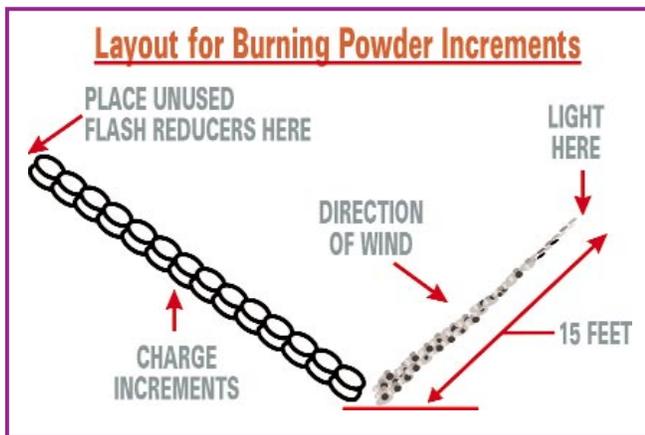
Propellant and Powder

They're Unforgiving

Everyone gets a kick out of watching things burn. It is a natural curiosity that consumes people's interest. Unfortunately, fire is unpredictable and often uncontrollable.

Artillery and mortar units that burn unused propellant charges and powder increments are supposed to follow strict guidelines when it comes to burning excess increments.

FM 6-50 is very clear in spelling out the proper procedure for conducting this type of operation:



(1) Select a burning site at least 200 feet from grass and loose debris as well as personnel and equipment.

- (2) Determine the direction of the wind.
- (3) Place charge increments in a single layer row not more than 12 inches wide.
- (4) Arrange the row so that the powder will burn into the wind.
- (5) Lay a train of combustible material about 15 feet long, perpendicular to, and at the downwind end of the row of charge increments. Light this train at the end farthest from the increments.

Unfortunately, the following accidents illustrate what happens when soldiers get complacent:

• A soldier was preparing to burn powder after receiving a movement order and did not follow proper procedures. He burned the propellant with the wind blowing towards him and suffered 2nd degree burns to almost half his body.

• In another instance, some foreign soldiers spread propellant on a beach in close proximity to an 8-foot sea wall and initiated the burn with incendiary grenades primed with non-electrical blasting caps. Subsequently, a mass detonation occurred and blew the sea wall up and caused property damage to nearby homes.

• Not long ago, a soldier was burning powder IAW FM 6-50, and after testing the wind direction, he placed the powder increments in an east-west configuration. However, only one-

Burning 155mm Powder Increments ...

1

Distance - 10 yds

2

20 yds

3

50 yds

4

100 yds

Distances indicated above are from the point photographs were taken.

third of the powder successfully burned. He then arranged a second burning. Without rechecking the wind, he ignited the remaining powder. The wind had since shifted to the north and forced the fire into a nearby tree line. A HMMWV that was parked in the tree line caught fire and was subsequently destroyed along with all the contents.

When conducting this type of operation, it is imperative to take all precautions and to follow FM 6-50 and SOPs to the letter. Remember, propellant and powder are unforgiving!

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Traffic Safety

Road Bullies

Traffic experts say there are more and more aggressive drivers on the road than in past years. Every day, drivers are facing more stress at work and at home and increasingly tougher and longer commutes. These drivers are pressed for time and caught in traffic jams, and they just don't want to waste time driving defensively.

Who are these aggressive drivers? It seems to be the high-risk drivers—the ones who are in a hurry and take chances. They dart in and out of traffic, speed, tailgate, cut you off, pass on the right, run stop signs and red lights, honk their horns, and give you the “rude finger” gesture, usually when it is their fault.

Some of these aggressive drivers are armed with the attitude that the new safety features on cars today will protect them—air bags, seatbelts, antilock brakes, pop-out windshields, child seats, reinforced doors, and collapsible steering wheels. Experts often say drivers take more risks and are more aggressive in their driving because of these “safety” features; however, they do not stop accidents!

WHAT TO DO WHEN CONFRONTED BY AN AGGRESSIVE DRIVER

- ◆ Make every attempt to safely move out of the aggressive driver's way.
- ◆ Do not challenge an aggressive driver by speeding up or attempting to “hold your own” in the travel lane.
- ◆ Always wear your seat belt—not only will it hold you in your seat and behind the wheel in case you need to make an abrupt driving maneuver, but it will also protect you in an accident.
- ◆ Avoid eye contact with the aggressive driver.
- ◆ Ignore gestures, and refuse to return them.
- ◆ Report aggressive drivers to the appropriate authorities by providing a vehicle description, license number, location, and if possible, direction of travel.
- ◆ If you have a cellular phone, safely pull over to the side of the road and call the police.
- ◆ If an aggressive driver is involved in an accident farther down the road, stop at a safe distance from the accident scene, wait for the police to arrive, and report the driving behavior that you witnessed.

Remember, when you are behind the wheel, you have assumed responsibility for yourself and for others. Resist the urge to drive aggressively or beyond your capabilities. Take your driving responsibility seriously. Lives depend on it!

Update

Effective 29 Apr 98, the Office of The Surgeon General updated the policy guidance for fluid replacement during training as follows:

Fluid Replacement Guidelines for Warm-Weather Training (Average Acclimated Soldier Wearing Hot-Weather BDU)

Heat Category	WBGT °F	Easy Work		Moderate Work		Hard Work	
		Work/Rest*	Water Per Hour	Work/Rest*	Water Per Hour	Work/Rest*	Water Per Hour
1	78-81.9	No limit	½ qt	No limit	¾ qt	40/20 min	¾ qt
2	82-84.9	No limit	½ qt	50/10 min	¾ qt	30/30 min	1 qt
3	85-87.9	No limit	¾ qt	40/20 min	¾ qt	30/30 min	1 qt
4	88-89.9	No limit	¾ qt	30/30 min	¾ qt	20/40 min	1 qt
5	>90	50/10 min	1 qt	20/40 min	1 qt	10/50 min	1 qt

*Rest means minimal physical activity (sitting or standing) and should be accomplished in the shade if possible.

Note 1: The work/rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hours of work in the specified heat category. Individual water needs will vary \pm ¼ quart per hour.

Note 2: CAUTION: Hourly fluid intake should not exceed 1½ quarts. Daily fluid intake should not exceed 12 quarts.

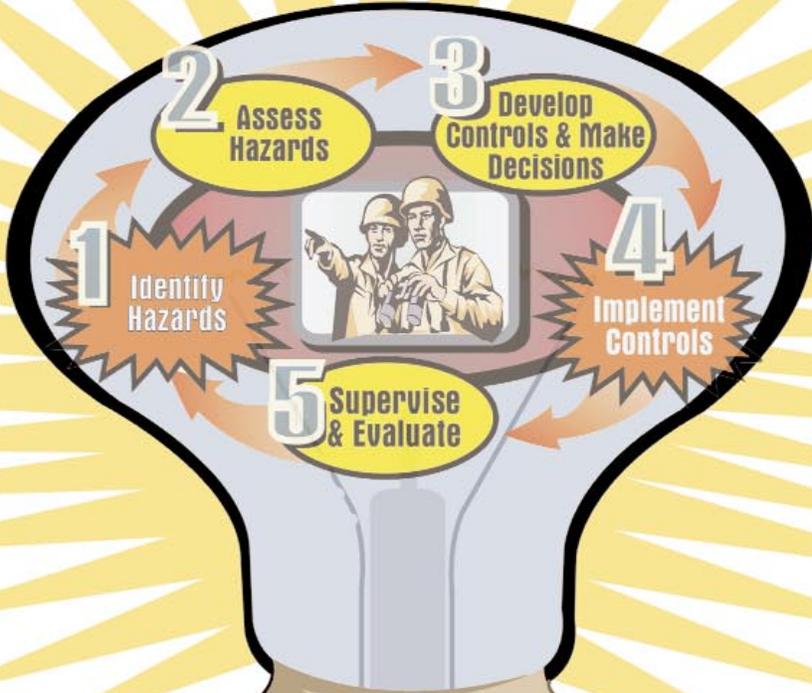
Note 3: MOPP gear or body armor adds 10°F to WBGT Index.

Examples:

Easy Work	Moderate Work	Hard Work
<ul style="list-style-type: none"> ■ Weapon maintenance ■ Walking hard surface at 2.5 mph, \geq30-pound load ■ Manual of arms ■ Marksmanship training ■ Drill and ceremony 	<ul style="list-style-type: none"> ■ Walking loose sand at 2.5 mph, no load ■ Walking hard surface at 3.5 mph, <40-pound load ■ Calisthenics ■ Patrolling ■ Individual movement technique; i.e., low crawl, high crawl. ■ Defensive position construction ■ Field assaults 	<ul style="list-style-type: none"> ■ Walking hard surface at 3.5 mph, \geq40-pound load ■ Walking loose sand at 2.5 mph with load

Note: Soldiers who are overweight, dieting, or past heat casualties are more prone to heat injuries. As a result, their activities must be closely monitored.

POCs: COL Edwin A. Murdock, USASC Surgeon, DSN 558-2763 (334-255-2763), murdocke@safety-emh1.army.mil and MAJ Robert W. Wallace, USASC Industrial Hygienist, DSN 558-2443 (334-255-2443), wallacer@safety-emh1.army.mil



Sharing Risk-Management Ideas

It takes work to set up a good safety program, but the rewards are great. What is saved in time, training, equipment, and personnel losses more than makes up for the investment of work it takes to put a program together. Some of the units shared their programs with *Countermeasure*. These programs are excellent examples of active risk management procedures that other units can use in setting up their own risk-management programs.



The Army is currently experiencing an increase in POV fatalities/accidents, the number one killer of our soldiers. We must reverse this up-trend. It's up to each one of us to keep risk management in the forefront of everything we do—on duty and off. Let me give you a positive, good-news story: As of 15 Jul 98, on-duty ground accident fatalities are down 48 percent and 59 percent compared to last year and the three-year average, respectively. That result is due to soldier and leader involvement, adhering to the standards, and good risk management. Safety is 24 hours a day—not just while we're on base or in uniform.

—BG Burt S. Tackaberry, CG, U.S. Army Safety Center

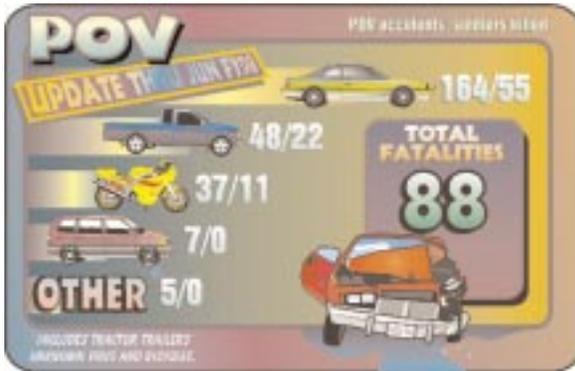
ARMY GROUND RISK-MANAGEMENT PUBLICATION
COUNTERMEASURE

**The Official Safety Magazine
 for Army Ground Risk-
 Management**

- BG Burt S. Tackaberry**
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Burt S. Tackaberry
Burt S. Tackaberry
 Brigadier General, U.S. Army
 Commanding Officer

Director's Corner



Looking back over my first year as the Director of Army Safety, I am pleased with our safety record. It is paying huge dividends in preserving the Army's war-fighting capability. However, we must not lose sight of one thing: any accidental loss of life is unacceptable!

We cannot afford to let our guard down for a minute when it comes to risk management. We cannot continue to do the things that are injuring and killing our soldiers: trucks rolling over because drivers are not properly trained; paratroopers dying because the unit doesn't enforce the standards; soldiers crushed by tank turrets or vehicles because of a communication breakdown. We are all important members of the team and teammates do not let their buddies down.

I also want to take this opportunity to remind leaders that we are still in the "101 Critical Days of Summer" until Labor Day. Over the next month, many of us will continue to enjoy summer picnics, water sports, and long drives while on vacation.

Each year, water-related activities and privately owned vehicle (POV) accidents have taken their toll on Army soldiers and their families. To make matters worse, most of the fatalities were preventable.

During FY 97's "101 Critical Days of Summer," the Army had a total of 48 soldiers killed in ground accidents. The leading cause of accidental death was attributed to POV operations with speed, fatigue, and situational awareness being the major contributors.

We must take every precaution while operating a vehicle. First, buckle up! Seatbelts do save lives; it is a proven fact. Next, if you are attending a social function and expect to consume alcohol, appoint a designated driver. Get enough rest before taking a trip. If you begin to feel drowsy, stop and take a nap.

Have fun during the summer months and enjoy family and friends, but don't let the fun get in the way of common sense and good judgment. Take the time to recognize the hazards and assess the risks involved in whatever you do, whether on or off duty. By identifying the risks associated with the activity, you can take the appropriate actions to reduce or eliminate the risks.

You are an important part of our Army family. Take responsibility for your safety and the safety of those who depend on you. ♦

—BG Burt S. Tackaberry, Director of Army Safety

Leadership Is Key To Successful Program

It is the nature of the job that most of the stories we hear in the Safety Center are about things that go wrong: equipment getting broken, soldiers getting hurt, or worse—soldiers killed in accidents. When leaders and soldiers make the right risk-management decisions, unit readiness is increased and fellow soldiers are not injured or killed. That's why when we hear of an effective safety program in place, we want to share this information with the rest of the Army and everyone else who will listen. One in particular is the United States Army Alaska (USARAK) Privately Owned Vehicle (POV) Accident Prevention Program.

As part of the Model POV Safety Program, the United States Army Safety Center (USASC) visited Alaska to study their aggressive force protection strategy and consider it as a model for an Armywide program. The following areas were reviewed:

■ **Regulations.** Commander's Policy Memorandum 98-3, Privately Owned Vehicle (POV) Safety and USARPAC MOVE Program is in place and working. The policy shows command emphasis and is designed to assist commanders in preventing accidents and keeping soldiers safe.

■ **Statistics.** At the time of the study, Alaska had experienced no POV fatalities since 1994.

■ **Command involvement.** The 172d SIB Commander's safety philosophy and personal involvement in accident prevention are known throughout the command. His fundamental principle is that leaders must set high standards for the safe operation of POVs and motorcycles and enforce them.

It is a requirement that all company/ troop/battery commanders conduct a risk assessment of every soldier in their unit during inprocessing. Risk assessment includes soldier's self-discipline, driving experience, alcohol and/or drug abuse habits. Armed with this information, leaders identify soldiers who are high risk for accidents and direct the required countermeasure actions, i.e., defensive driver's training or formal counseling.

Numerous POV safety initiatives are in place—motorcycle/moped safety courses,

remedial driver training, and driver improvement programs. Help cards, also known as "taxi cards," are given to each soldier. This taxi card provides the soldier with the chain of command's telephone numbers for 24-hour use in case of an emergency. Taxi cards also provide the soldier an alternative to driving after drinking or while too fatigued to drive safely, and are used with no questions asked by the chain of command. The taxi card program is addressed in the new Safety Center *POV Toolbox*. All commanders and NCOs ensure the *Toolbox* is used down to platoon level to promote POV safety. The commander ensures that all NCOs are trained in safety.

Company/troop/battery commanders ensure safety briefings are conducted for all soldiers prior to each long weekend, 4-day pass, ordinary or emergency leave, or PCS. Leaders ensure soldiers are sufficiently rested prior to departure on extended leaves/passes. Commanders also ensure every soldier's vehicle is inspected for safe operation utilizing a POV Safety Inspection Checklist.

Following every fatal and serious injury POV accident, commanders conduct an assessment of the accident with the involved soldier's chain of command to determine why the accident occurred and how it could have been prevented. Preventive measures are implemented to prevent similar accidents.

■ **Family programs.** Family members are encouraged to attend newcomer briefings. Leaders encourage activities on post to keep soldiers and their families off the road. For recreational outings, soldiers are provided bus transportation to the Seward Army Resort that is two hours away.

■ **Training.** Seasonal awareness is a must! POV accident prevention activities are a mandatory part in preparing for summer and winter seasons. Every attempt is made to educate soldiers and family members regarding the seasonal driving hazards. USARAK conducts two Safety Awareness Day activities annually: one preceding the Memorial Day weekend to help soldiers, family members, and civilians prepare to cope successfully with summer hazards (vacation traveling, increased traffic,

road construction, etc.), and one preceding the Labor Day weekend to prepare for winter.

For the most part, people recognize the imminent rugged, arctic dangers of driving in winter conditions and take proper precautions. POV injury prevention efforts are heavily emphasized during holiday seasons and long/extended weekends. Motorcycle operations are restricted during the winter months because of extremely hazardous road conditions.

Safety awareness training and activities are the result of a collaborative effort with the provost marshal, occupational health, Alcohol and Drug Abuse Prevention Control Program (ADAPCP), preventive medicine, fire

department, local and state police, local vendors, CRCP administrator, and safety. All soldiers are involved in the accident prevention program and educated about the risks of speed, fatigue, and use of alcohol. The commander requires lower enlisted personnel to conduct safety briefings on a variety of topics pertinent to POV accident prevention: benefits of seatbelts and motorcycle helmets, and the hazards of excessive speed, fatigue and alcohol.

■ **Enforcement.** State DUI policy violations are posted in all establishments that serve alcohol. Local police and Alaska State Troopers join forces to create teams referred to as “Drunk Busters” during the period 15 Nov through 3 Jan and over the Memorial Day, 4th of July, and Veterans Day weekends. The Drunk Busters concentrate their efforts on keeping drunk drivers off Alaska’s roads.

The provost marshal is the proponent for traffic safety and continually works with local law enforcement and state troopers to enforce traffic laws.

The provost marshal conducts “no tolerance days,” unannounced road blocks, license checks, seatbelt checks, self-radar checks, and DUI checks. They only allow one gate to remain open during 2300-0500.

■ **Promotional items.** USARAK’s awareness programs are second to none. At least weekly, they publish a POV prevention flyer/reminder. Leaders impart to their soldiers the safe methods of operating POVs. These proven “safety tips”

include: Don’t drink and drive; don’t drive when drowsy; keep up vehicle maintenance; don’t speed; don’t drive recklessly; always wear seat and shoulder belts.

Sight impairment goggles, a tool used by commanders that allows the user to experience the effects of alcohol, were purchased to assist in reducing DUI offenses within the command.

■ **Penalties.** Alaska’s DUI ordinance is one of the strictest in the country. On the first offense, the driver loses his POV license for 90 days, fined \$250-\$5,000, and imprisoned a minimum of 72 hours to one year. The second time, he loses his POV license for a year, fined \$500-\$5,000, and imprisoned a minimum of 20 days to one year.

The third time, it is a Class C felony if previously convicted of two or more DUIs within 5 years, fined not less than \$5,000, imprisoned 120 days to one year, and possible loss of motor vehicle.

■ **Awards/Rewards.** The installation safety office has an awards program in place. Each level of command has developed an awards/rewards program that suits their needs. Some units give days off for DUI-free days and others give individual soldiers recognition for

stopping any unsafe act. The key is to recognize units/soldiers for being proactive in saving lives.

Bottom Line: USARAK’s POV accident prevention program is right on target. The command’s philosophies, “All accidents are preventable” and “Accident prevention is an inherent function of leadership” speak highly of the commander’s involvement. Designating accident prevention as a leadership function doesn’t release any individual concerned from the responsibility of striving for the greatest possible degree of safety. USARAK has a successful accident prevention program because the commanders/leaders get personally involved for the welfare of each and every soldier and enforce safety awareness, unit pride, training to standard, strong leadership, and concerned supervision — a **total team effort!** ♦

POCs: LTC Pete Simmons, Chief, Ground Systems & Accident Investigations Division, USASC, DSN 558-2926 (334-255-2926), simmonsp@safety-emh1.army.mil and AI Brown, Ground Systems Division, USASC, DSN 558-2534 (334-255-2534), brownj@safety-emh1.army.mil

USARAK has a successful accident prevention program because the commanders/leaders get personally involved for the welfare of each and every soldier and enforce safety awareness, unit pride, training to standard, strong leadership, and concerned supervision—a total team effort!

What Are YOU Doing to Promote Safety?

One Unit's Answer to DUI

How did Bravo Troop, 1st Squadron, 11th Armored Cavalry Regiment (ACR), Fort Irwin, CA, reach six years without a single driving-under-the-influence (DUI) incident? How are they maintaining that track record?

"The answer is pretty simple," says CPT Eric R. Wick, Commander, Bravo Troop, 1/11th ACR. "The soldiers are the ones enforcing the no DUI. They're doing it just out of sheer pride for their unit and for the record and what it stands for. The record has given the soldiers something to brag about. And believe me, we brag a lot. We're all proud of our accomplishment."

The Answer

✓ Think before you drink! If a soldier plans on drinking, or there is even the smallest chance that he might drink, the first thing he does is alert the designated driver on call. Secondly, he pairs up with the appointed designated driver when they go out. The buddy system works.

✓ The chain of command gets personally involved in the unit. They are available and visible; they communicate with their soldiers; and they take a personal interest in each

soldier's welfare. When a soldier is new to the unit, he is briefed by the first sergeant, who explains that the unit wants to maintain its DUI-free record. The section chief and the platoon sergeant tell him the same thing. This gets the point across that the whole unit supports the program.

✓ The leadership has helped foster this atmosphere by rewarding soldiers with DUI compensation days or training holidays each quarter. A DUI streamer was awarded for 1830 days and the soldiers were exempt from duty on 12 February 1998 (six years DUI-free).

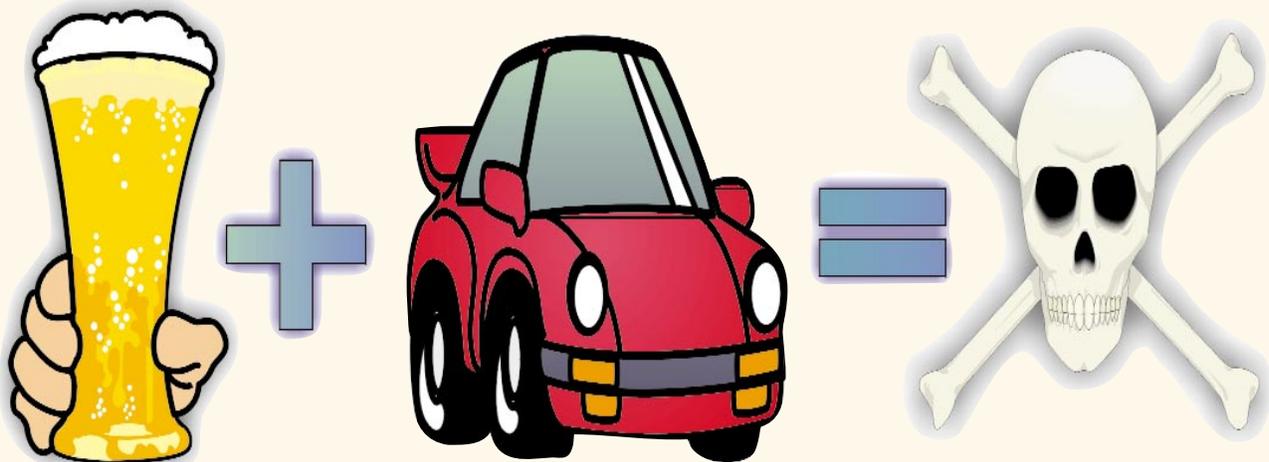
✓ Safety briefs are given at the end of every month and usually the soldier of the month takes charge of the formation and conducts the brief.

✓ The higher command elements, to include the Post Commander, have recognized the unit's success and this helps keep the spirit alive in the troopers.

Bottom Line

A caring command climate and soldier pride are key in the success of any program. ♦

POC: 1LT John Birdsong, Armor Branch, 11th ACR Safety Officer, Fort Irwin, CA, DSN 470-3553 (760-380-3553), birdsonj@irwin.army.mil

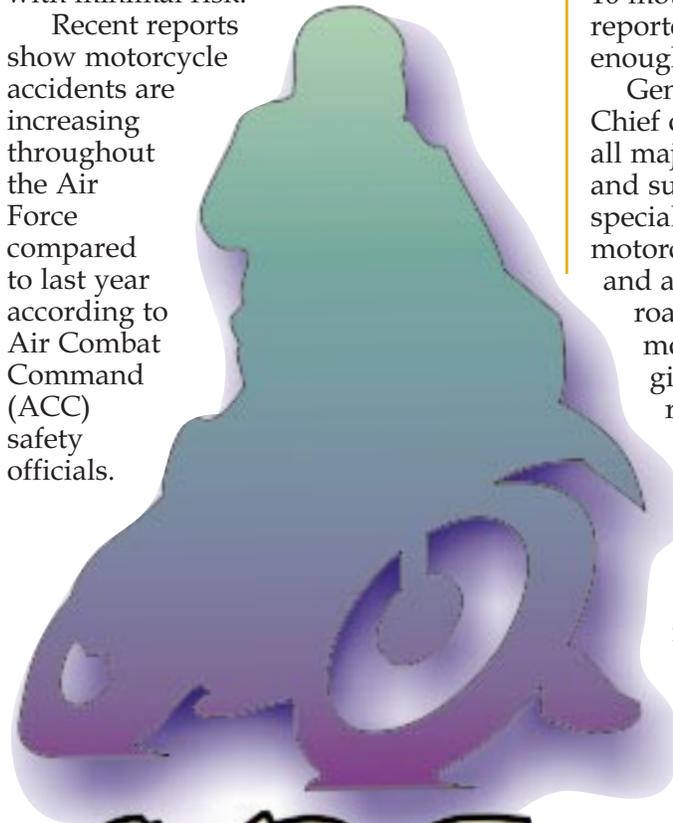


The Air Force's Newest Weapon—ORM

The Air Force is happy to share a very important and successful risk management program.

Their newest weapon, Operational Risk Management (ORM), provides the tools to help identify and control risks. The end result is mission accomplishment with minimal risk.

Recent reports show motorcycle accidents are increasing throughout the Air Force compared to last year according to Air Combat Command (ACC) safety officials.



SAFETY

“There have been nine deaths this fiscal year versus seven last year. The ACC units have reported three fatalities and a permanent-partial disability in motorcycle accidents this fiscal year,” said Frank Altamura, ACC Ground Safety Branch programs chief. “Another 16 motorcycle accidents have been reported that resulted in injuries serious enough for people to lose time at work.”

General Michael E. Ryan, Air Force Chief of Staff, said in a message sent to all major commands, “Every commander and supervisor must emphasize the special awareness required for safe motorcycling, by both motorcycle riders and automobile drivers sharing the road. The high risk of operating a motorcycle recklessly should be given special emphasis. Motorcycle riders must operate their vehicles responsibly and automobile drivers must remain alert to motorcyclists.”

Operational Risk Management can help motorcyclists enjoy the summer months on the busy highways.

Motorcycle ORM guidance for commanders and supervisors:

- Identify untrained motorcyclists arriving to the base.
- Identify people who ride as a sport or means of transportation.
- Identify the hazards and assess the risks that confront motorcyclists, such as experience, weather and traffic

Editor's Note: This story is courtesy of ACC News Service & MSgt Mike Foldhazi, Superintendent, 15AF Safety Division, mike.foldhazi@travis.af.mil

conditions; and implement control measures such as offering the required motorcycle safety training.

- During inprocessing briefings, ensure the motorcycle course is made known and the local conditions are explained to newcomers.
- Ensure that motorcyclists have received training, that there are enough instructors available to do the training, and that the instructors are given the time needed to teach the Motorcycle Safety Course.

“Once the hazards are identified, assessed and control measures implemented, the rest of the ORM

process of supervising and reviewing can be easily undertaken,” said Altamura.

The command safety office

recommends the following control measures:

- Limit travel until gaining the appropriate experience for the different traffic conditions.
- Use personal protective equipment when riding.
- Limit the size of the

The Air Force ORM 6-step Process

- Identify hazards
- Assess risks
- Analyze risk control measures
- Make control decisions
- Implement risk controls
- Supervise and review

motorcycle to one you can handle. ♦

POC: Frank A. Altamura, Chief, HQ ACC/SEG Programs, Langley AFB, VA 23665-2700, DSN 574-8815 (757-726-8815), frank.altamura@langley.af.mil

Motorcycle Army Regulation Reminder

AR 385-55 makes it clear that all soldiers and civilians working on Army installations have no choice to make about motorcycle or moped safety. According to Army regulations, the following is mandatory and must be enforced:

- Drivers will satisfactorily complete an Army motorcycle safety course.
- Headlights must be on at all times.
- Two rearview mirrors are required, one on each side.
- Riders will not use headphones or earphones while driving.
- Riders will wear an approved and properly fastened helmet. The helmet will meet Department of Transportation (DOT) construction standards.
- Riders will wear proper protective

equipment. This includes eye protection such as clear goggles or a face shield attached to the helmet (a windshield or fairing is not eye protection). Riders will also wear full-fingered gloves, long trousers, long-sleeved shirts or jackets, high-visibility garments (bright colored for day, reflective for night), and leather boots or over-the-ankle shoes.

Soldiers must comply with these requirements at all times, on or off duty, on or off post; civilians will comply with the regulation while on post or while on government business on or off the installation. The regulation covers government-owned motorcycles and mopeds as well as privately owned ones. ♦

POC: Al Brown, Ground Systems Division, USASC, DSN 558-2534 (334-255-2534), brownj@safety-emh1.army.mil

Food Service Safety

M-2A Burner

During my training and assistance visits on individual drill training (IDT) weekends and during annual training events, I often hear comments to the effect that M-2A burners are not safe to operate. Nothing could be further from the truth in my opinion, and here's why.

If good solid maintenance, cleaning and required tests are performed before, during and after field exercises where these burners are used, they are as safe and reliable as any equipment in the Army's inventory.

When it comes to M-2A burners, I've found that the most often-neglected item is the safety valve device. This device requires quarterly testing IAW TM 10-7360-204-13P with changes. It is

extremely important that this safety valve device functions properly. It is this device that will keep the M-2A burner from exploding if pressure builds beyond 60 pounds per square inch (psi). The safety valve device's design function is to release and regulate internal pressure to approximately 35 + 10 psi. The correct procedure for testing this device goes like this:

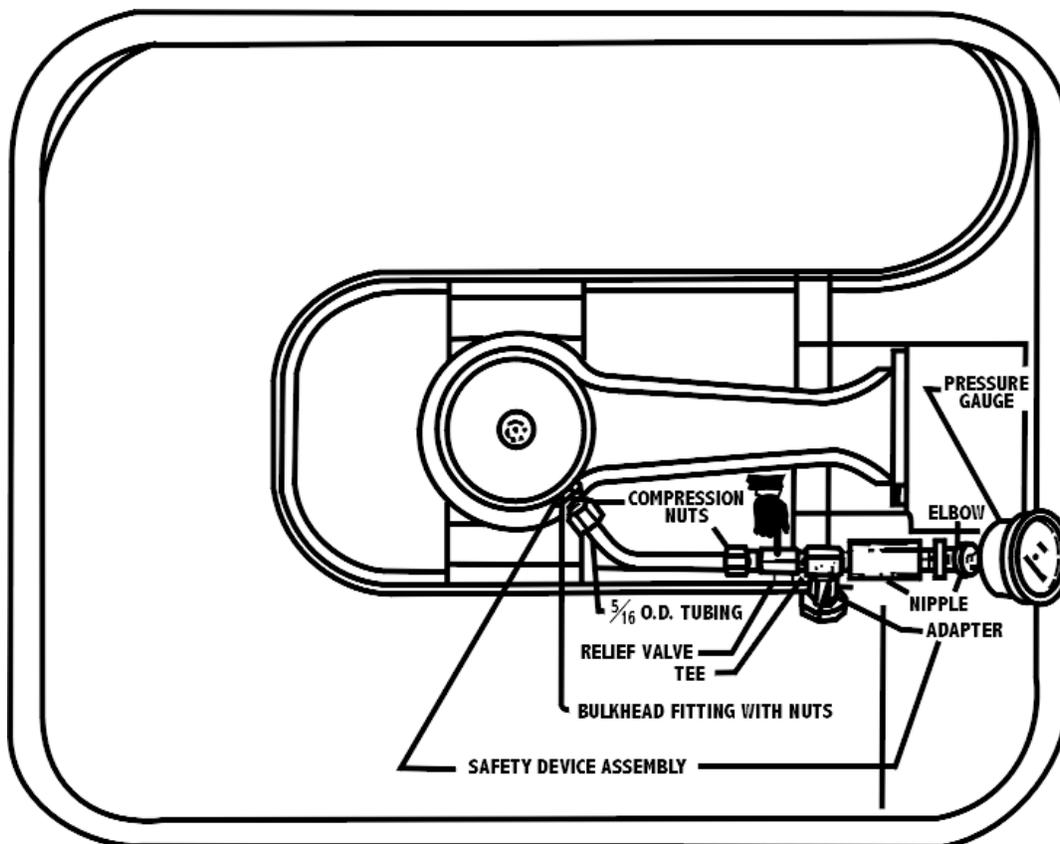
First, drain the unit's fuel tank completely. Use an air compressor to pressurize the tank manually to approximately 60 psi. At this point, the safety valve device should begin to function and tank pressure should begin to drop rapidly to about 35 + 10 psi.

If the safety valve device fails to operate properly, replace it. **Do not attempt to make adjustments on your own.**

The safety valve device installed on all M-2A burners is a critical piece of equipment. When properly maintained and tested, it could very well prevent a serious injury or even save the life of a soldier--maybe yours.

Top shields on M-2A burners are being removed and then not being

The M-2A Burner Unit



replaced when the units are being put into operation. The purpose of these shields is to reflect heat up and away from the unit's fuel tank, which in turn helps to keep excess pressure from building up. Leaders and operators should ensure that top shields are properly installed prior to lighting any M-2A burner. Replace shields when they start to discolor.

Preheaters. On more than one occasion, I've visited units in the field who have as many as 12 to 18 M-2A burners on hand, but only 2 to 3 burners are operational. When I ask what the problem is, the answer I mostly get is that the preheaters don't work and there aren't any new ones.

If you don't maintain your car as required by the manufacturer, or have someone else take care of it, sooner or later you're going to have problems. Well, the same principle applies here. Preheaters require maintenance and cleaning. Once done, they'll operate as they're intended.

In this particular instance, food service personnel were trying to prepare rations for nearly 300 soldiers. Because most of the generators they had on hand were not operational and the M-2A burners couldn't be used, the menus had to be changed and food items were dropped. Soldiers deserve better.

POC: Mr. Billie R. McLaughlin, Food Service Specialist, 120th Infantry Brigade, S-4 Section, Fort Sam Houston, TX 78234, DSN 421-0548 (210-295-0548).

Proper Marking of Water and Fuel Cans

The importance of proper marking, use, and storage in this critical area cannot be overstated. Sloppy fuel handling can lead to health, safety, and environmental problems. Water residue in fuel cans contaminates fuel and degrades equipment. Conversely, unmarked fuel cans can be mistaken as water cans and endanger soldiers.

Think about this: A soldier coming on night shift picks up a full, unmarked can and takes it into the mobile kitchen trailer thinking the can contains water. The can is really filled with fuel. Between the chances of fuel coming in contact with food products and its proximity to open flames, the disastrous possibilities boggle the mind. This scenario can be easily avoided if fuel and water cans are properly marked.

Commanders must ensure that unit SOPs and leaders at all levels are clear on the importance of maintenance and proper marking of food service equipment. High standards in terms of sanitation, safety, and food service must be trained regularly and enforced ruthlessly. **OUR OUTFIT IS IN THE FIGHT!** ♦

POC: Mr. Billie R. McLaughlin, Food Service Specialist, 120th Infantry Brigade, S-4 Section, Fort Sam Houston, TX 78234, DSN 421-0548 (210-295-0548).

From the Editor

Your response to our request for articles was great! We received an amazing variety of ideas and stories. We would like very much to publish all the articles in *Countermeasure*, but unfortunately we can't. In some cases, the text was too sketchy or we didn't have an address or phone number to respond to the writer. We do know you're out there, please contact us again. We would also like to know if you have an idea about a technical subject, equipment, or procedure that you haven't seen covered in *Countermeasure*. Send those stories to U.S. Army Safety Center, ATTN: CSSC-OG (*Countermeasure*), Fort Rucker, AL 36362-5363 or e-mail countermeasure@safety-emh1.army.mil ♦

Safety First!

Accident Investigations

How Detailed Should They Be?

An integral part of an effective accident prevention program is the investigation, reporting and analysis of accidents. Only through proper investigation can we prevent further accidents. The United States Army Safety Center (USASC) deploys teams of investigators worldwide to investigate the major Army accidents, to include all class A aviation, selected class A ground, and some class B aviation and ground accidents. The task of investigating the other accidents falls to the unit safety officer. But just how detailed should that investigation be? Normally, minor accidents are

investigated very quickly. The safety officer fills out an accident reporting form (Abbreviated Ground Accident Reporting Form - AGAR) after an initial informal talk to the driver of the vehicle or the pilot of the aircraft. The report is then sent off to the USASC and recorded in the unit accident log. Action completed. But was the accident investigated as thoroughly as it should have been? Not always. A lot of times, we miss the point and lose a large amount of information and may miss a great training opportunity. We can gloss over many problems by conducting the "quickie investigation." This came to light only recently in my unit.



Sometimes minor accidents appear to be easy to solve. Only through detailed analysis can the real cause of the accident be determined.

My unit's POL section consists of five HEMTT tankers and several enlisted fuel handlers, who conduct 24-hour refuel operations. The night shift, normally one soldier, is responsible for recirculating fuel and taking aqua-glo samples at the end of the shift. Early one Sunday morning, the young fuel specialist prepared the vehicle to recirculate the fuel. Standing outside the cab, the vehicle was started, the transmission shift lever was placed in neutral, and the power takeoff switch (PTO) was placed in the ON position. The transfer was left in the HIGH position. The fuel handler went to the rear of the truck and engaged the high idle and started the pump. The dead man's handle was pulled out, the lever depressed, and placed on the air hose connector. The fuel handler then moved to the next truck to do the same thing. Out of the corner of his eye, the fuel handler saw the first truck move. The fuel handler turned and raced towards the cab to stop it, but was too late. The vehicle accelerated rearward backing over a 6-inch high parking curb and finally came to rest in a ditch--10 feet deep and 50 feet behind the vehicle parking spot. The fuel handler notified unit operations center personnel who activated the pre-accident plan.

Arriving on the scene, it looked more serious than it was. We were prepared to conduct a Class C (more than \$10,000 in damages) accident investigation. As it turned out, there was no fuel spilled, no injuries, and only \$1,150.47 in damage to the vehicle. Due to the minor damage to the vehicle, the accident did not meet reporting criteria to the U.S. Army Safety Center, but it was reported to the local safety office and thoroughly investigated.

Pictures were taken of the vehicle and then it was recovered from the ditch. It was then thoroughly inspected by a support maintenance unit. Interviews were conducted with the motor officer, the motor sergeant, the motor pool shop foreman, the vehicle mechanic, the driver, the POL section sergeant, and several other people. Training, personnel, medical, and vehicle maintenance records were reviewed. A weather statement was also prepared. The database at the USASC was queried to see if there were any inherent problems with the HEMTT transmission, but the results were negative.

After completing the fact-finding portion of the investigation, I analyzed the discovered facts and determined there were no environmental or materiel factors that contributed or caused this accident. Only human errors. This is what was found:

- A problem had been found with the

transmission on the annual service conducted seven months before the accident but had not been corrected. The service report stated, "Transmission will not engage in drive unless shifter is between drive and third gear."

- Two months before the accident, a neutral safety switch had failed and was by-passed so the pump could be used for refueling, defueling and fuel recirculation operations. The pump, operated with the vehicle engine at high RPM, would now run when the vehicle was in drive, neutral or reverse. The pump should only be able to operate with the vehicle transmission in neutral.

- The transmission began slipping in and out of gear a month before the accident, but was not documented on the DA Form 5988-E during motor stables.

- Five days before the accident, another night shift operator had a problem with the transmission slipping in and out of gear. The following morning, the vehicle was taken to the motor pool where the deficiency was documented on the DA Form 5988-E. The deficiency was signed off on the DA Form 5988-E as being corrected, when in fact it had not been fixed, so the vehicle could be dispatched.

- The vehicle was dispatched with a known deadlining deficiency and was driven back to the flight line and put back into operation.

- The operator did not know he should have placed the transfer in the neutral position when parking the vehicle. If the transfer had been in neutral when the transmission slipped into reverse, the vehicle would not have moved.

This accident was very minor, but the potential for a fatal and costly mishap was there. One can only imagine what the cost in lives and dollars could have been if the vehicle had been used during refueling of one of the unit's RC-12 aircraft that are parked in hard shelters (igloos). The fuel truck is backed in and parked in front of the wing where the fuel tanks are located. Additionally, had this accident not been thoroughly investigated as it had, this accident was bound to happen again, but with the potential for a catastrophic outcome.

So when your unit has a seemingly minor accident, don't be so fast in treating the accident form as just another piece of paper that is required to be filled out and filed away. Take a hard look at the accident, you'll be surprised at what you may find. ♦

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“Think!”

If you were asked to come up with a one-word definition for safety, or one-word key to achieving it – what would your reply be? Would you suggest “alertness,” meaning always being ready for the unexpected? Would your vote be for “skill” – being especially adept? Would you define safety as “experience,” suggesting that the veteran never gets hurt?

Perhaps you would settle on “cooperation” as the key to safety, meaning that it requires us to exercise patience and get along with our fellow worker. Or, after due deliberation, might you finally define safety by using the single word – **“think?”**

Certainly alertness, skill, experience, and cooperation are all associated with safety and contribute to it, but since they in turn require thought, they must be regarded as secondary characteristics.

I read an article a few years ago about a prominent business executive who constantly urged his staff to **“THINK!”** He had **“THINK!”** signs posted everywhere and virtually made it the company slogan. Within a few years, he turned the safety program completely around into one of the best in the corporate sector.

This word alone can lead to success in reducing accidents and injuries for us all. It has been said that about 90 percent of all accidents can be attributed to unsafe acts on the part of the worker, and failure to think before acting is the cause of practically all accidents in this category. For example:

■ A carpenter removes the guard from a table saw for the purpose of expediency and an injury results. The carpenter didn’t think about the original purpose of the guard, and therefore suffered the unfortunate consequences.

■ A machinist, again for the sake of saving time, fails to don safety glasses for a project that will “only take a minute.” Again, injury results because of the operator’s failure to think of the possible negative results.

These are two of the thousands of work-related injuries that happen every year that could have been prevented. Let me try to explain my point. I am not saying that everyone who gets hurt didn’t think about what they were doing or blatantly disregard the safety procedures. Most workers want to follow all safety rules because it affects their safety and health. But we have all been rushed for time to complete a project or thought that it will “only take a minute,” and not take that extra step to protect ourselves or those around us. I certainly have, and I am the safety guy. Most times, accidents can be avoided if we discipline ourselves to think carefully about the consequences before acting. Let’s all take the extra time to **“THINK”** before we act. Remember when we **THINK** safety, we act safely. ♦

POC: SSgt Chris Davis, Wing Safety, 375 AW/SEG, Scott Air Force Base, IL, davisc@wing.scott.af.mil; courtesy of MSgt Mike Foldhazi, Travis AFB, CA

Oops!

How many of you caught the errors on the June cover? We missed them too. The M1 tank on the cover shows the vehicle, apparently moving tactically, with two crewmen above “nametag defilade” and with the driver’s hatch open. Both situations violate current safety directives. All combat vehicle crewmen must remain no higher than “nametag defilade” to be able to drop down inside in case of a rollover. The Safety of Use Message (SOUM) 96-08 on the Abrams tank states that the driver’s hatch must be closed before any powered movement of the turret. *Countermeasure* regrets the mistake. ♦

POV update
POV FATALITIES
THRU JULY FY 98
100
THRU JULY FY 97
71

ARMY GROUND RISK-MANAGEMENT PUBLICATION

COUNTERMEASURE

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Human Error Leads Accident Causes

Let's look for a minute at this thing we call "human error." When human error is cited as an accident cause factor, it does not necessarily mean that the individual soldier bears responsibility. The soldier could have been set up for failure by inadequate training, standards, support, and/or leadership.

The bottom line is that human factors at every level of the Department of the Army can influence mission outcomes for the individual soldier.



Safety statistics can reflect one of two things—a good news story or a bad news story. However, when one looks at the statistics, one tends to look at only the bad news. That is because we are looking at the accidents that have already happened. I want to pass to you good news: The Army is at a 10-year low for soldiers killed while on duty and doing their job. Why? We have quality soldiers who are doing demanding jobs under demanding conditions and doing them well. We have professional NCOs and officers who know the standards, enforce those standards, and ensure their soldiers follow the standards. It makes a difference. My compliments!

—BG Burt S. Tackaberry, CG, U.S. Army Safety Center

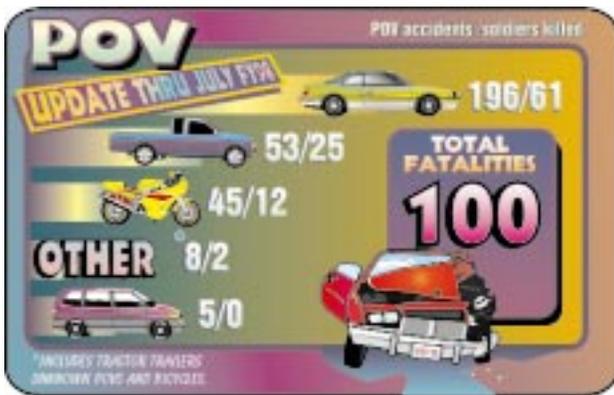
ARMY GROUND RISK-MANAGEMENT PUBLICATION
COUNTERMEASURE

The Official Safety Magazine for Army Ground Risk-Management

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Burt S. Tackaberry
 Brigadier General, U.S. Army
 Commanding Officer

Director's Corner



The soldier is the heart of our Army...and unfortunately, soldiers make errors. We do not intend to do it, we wonder why we did it, and too often we do it again. Why do we make these blunders? Some of those reasons escape control, but the majority can be controlled.

There are many basic causes of human-error accidents. One is individual failure, in which lack of self-discipline is one of the most common causes. Studies show that the soldier who is going to have an accident is often the one who knows the standards, but elects not to follow them.

Many times, soldiers choose to not follow rules, regulations, standards, or laws. Examples of this is the soldier who knowingly operates equipment in a manner for which it was not designed, or the driver who fails to follow convoy procedures, speed limits, safety belt regulations, or some other operating procedure such as performing before-, during-, and after-operations checks. Identifying this soldier before making him part of the operating system is the most effective way of reducing the chances of a human-error accident.

Other causes of human-error are leader, training, standards, and support failures. Often, these can be tied in some way to leaders who fail to train to standard and fail to enforce those standards. When you see soldiers performing unsafe acts, **stop them**. Make on-the-spot corrections every time you see a safety violation. If uncorrected, it may lead to injury or death. And leaders who accept those errors lower the standards in their units. The solution is simple: **Don't allow the standard to be lowered.**

—BG Burt S. Tackaberry, Director of Army Safety

It Wasn't All the Driver's Fault

It began as a mission to tow a disabled 5-ton truck with a heavy expanded mobility tactical truck (HEMMT) wrecker, M984A1, to the unit maintenance collection point (UMCP). It ended with the driver having multiple skull fractures and severe brain damage and the passenger sustaining multiple head, back, and leg injuries. The cause of this accident was a chain of preventable human errors.

Description of Events Immediately Preceding the Accident

The HEMMT wrecker, towing the 5-ton truck, was part of a convoy that was traveling 15 km over rolling terrain, marked with steep ridgelines reaching grades of over 10 percent. As the convoy proceeded down a long, sloping hill to a 'Y' in the road, the HEMMT wrecker veered to the left as the convoy lead proceeded to the right. The HEMMT wrecker honked his horn twice as if to signal a problem as his vehicle proceeded down the hill at an increasing rate of speed. It then careened off the road, went airborne for 34 feet, rolled to the right, and traveled an additional 150 feet before coming to rest upside down with the cab roof crushed.

As the accident investigation board began to pick through the facts surrounding this accident, it became obvious that unsafe soldier actions,

preconditions for unsafe soldier acts, supervisory failures, and an organizational failure had all caused this preventable accident to occur.

Unsafe Soldier Actions

There were specific unsafe actions by the driver that directly contributed to the accident:

■ **Failure to follow procedure.** The driver failed to follow proper hook-up procedures as outlined in the operator's manual. The technical manual was present in the vehicle, but was not used.

The connection of these brake lines would have provided a means of deceleration by braking the back six wheels of the 5-ton truck.

■ **Speed violation.** The driver was traveling the route at speeds between 20-30 mph while following a commercial utility cargo vehicle (CUCV). According to the TM, the maximum speed for a HEMMT while maneuvering off-paved roads is 15 mph. At the point of departure from the road, the HEMMT and 5-ton truck were traveling approximately 36 mph.

■ **Driving blind.** The driver was unfamiliar with the road and the route. The dirt road was unmarked. Consequently, it was not until about 875 feet from the curve that the driver realized that the road did not continue straight, but in fact, made a sharp 115 degree right turn. But, at his rate of speed, it was too late to react and



maintain vehicle control.

■ **Driving skill error.** The driver elected not to use the 'Jacobs' engine brake for speed control. The Jacobs brake would have provided a means of deceleration by using the engine to slow the rate of speed. Additionally, the transfer case shift lever was in the HIGH position instead of the LOW position. The low position also would have provided an additional capability to decelerate the vehicle. This was felt to be the result of improper training.

Preconditions for Unsafe Acts

While the unsafe acts by the driver were clearly the immediate causes for which this accident occurred, there were other equally important contributing causes. These causes were beyond the soldier's control, yet directly affected his performance. The soldier's unit could have avoided these problems.

■ **Fatigue.** The night prior to the accident, the driver's unit, a maintenance support team (MST), was only allowed 4 hours of sleep. They were awakened at 0300 for a movement ultimately delayed for 12 hours while the unit located some

missing equipment. These soldiers were not allowed to sleep. This clearly affected the accuracy and speed with which the driver could react in a difficult situation.

■ **Inexperience.** The driver and the co-driver were both inexperienced. The driver was a 63W10 (wheeled vehicle mechanic) and was licensed/qualified on the HEMMT only on level, paved roads. He was inexperienced in off-paved road driving, towing, or recovery of vehicles. The co-driver was a 45G10 (fire control systems repair specialist) and not qualified to drive the HEMTT. Their ability, individually or as a team, to risk manage the hazards of their mission that day were compromised.

■ **Support failure.** The Organizational Maintenance Shop (OMS) that conducted annual services on the HEMMT used the same preprinted checklist for all trucks regardless of the make or model. It shows a check for 'brake travel' which checks the travel of the brake pedal from full extension to where it stops on depression. This is fine for trucks with standard brakes, but it is not applicable to the HEMMT, which has air brakes. The proper procedure is to

A Soldier's Failure May Not Be Due to His Own Actions



Adapted from Reason (1990)

Adapted from Wiegmann and Shappell (1998)

check for the slack adjustment on the HEMMT. As a result, the HEMMT wrecker had three of the four back brakes out of tolerance, rendering them ineffective. This situation did not cause the accident, but contributed to the inability of the driver to stop his vehicle soon enough to avoid the accident.

Unsafe Supervision

Military organizations rely on the leadership of their supervisors (officer, noncommissioned officer, and civilian) to set the example and provide clear guidance for their soldiers to ensure mission success.

Circumstances in this accident cause one to question whether this happened:

■ **Failed to correct a known problem.** A battalion motor sergeant who observed the driver and co-driver hooking the 5-ton truck up to the HEMMT wrecker did not make an on-the-spot correction to let them know that they had forgotten to hook up the brake lines. He left to assist in repairing a Bradley. At the accident site, he specifically checked to see if they had attached the brake lines and noted that they had not. The power of on-the-spot corrections to stop problems from becoming accidents should never be underestimated.

■ **Inadequate NCO supervision.** The MST assistant section sergeant left with the UMCP serial instead of staying with the HEMMT wrecker convoy (the last group of vehicles). As the serial was about to depart, the sergeant instructed the CUCV driver (a PFC) to lead the last group to the UMCP when they were ready. There were no positive communication means established between vehicles, and the soldiers were not given a strip map or a route of march. Inexperienced leadership now complicated an inexperienced driver/co-driver situation.

■ **Inadequate maintenance supervision.** The OMS mechanic was not supervised or checked

by any production control or quality control supervisors during or after servicing the HEMMT wrecker. The failure to adjust the slack in the brakes may have been spotted at this time. This denied the driver effective braking when he most needed it.

Organizational Failures

Army components have a responsibility to appropriately resource Army programs--to give the soldier the means to meet mission requirements. The Driver's Training Program is one such program that failed to set the stage so that this soldier could succeed in his mission.

■ **Driver's training program failure.** The driver's training program for this unit and most units of this major Army component was found to be deficient in that they did not provide ample training opportunities for the soldiers to become proficient in on-road and off-road driving conditions. To create circumstances where a driver must acquire his off-road skills during a deployment to an Army Training Center, while performing a support mission and without adequate train-up, should not be the way we do business.

Conclusion

It is well recognized that human factors are involved in 80 percent of

all accidents. Unfortunately, when human errors, human failures, or human factors are mentioned, there is a tendency not to look beyond what the 'individual at the wheel' did, and simply allow the soldier to shoulder the complete responsibility for the accident. This HEMTT wrecker accident highlights the need to look beyond the soldier who was sitting behind the wheel. Failure to do so will result in a similar chain of human events repeating itself in the future...**with a more deadly outcome!!!** ♦

Questions regarding this accident, contact MAJ Gary Kotouch, U.S. Army Safety Center, DSN 558-2933, kotouchg@safety-emh1.army.mil

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 WHO IS INJURED OR DIES.

AUTHOR UNKNOWN

Stop! Dismount Your Ground Guides, Soldier!

Tactical operations put special demands on vehicle operators because of adverse environmental factors (rain, snow, mud, and dust), fatigue, and blackout operations as seen in the following accidents.

■ A company commander, preparing his unit for a National Training Center (NTC) rotation, gave a safety prebrief that included up-and-alert guards and the marking of sleeping areas with chem-lights.

Three days later, soldiers from a National Guard unit arrived and were assigned to augment his company for the approaching exercise. The following day, the platoon leader issued his operations order (OPORD) and added paragraph 6, *Safety*. He explained the marking and security level for the sleeping areas to include the track-dismounted soldiers' sleeping positions.

The unit deployed to the NTC, drew their vehicles, and began preparing for the exercise. Meanwhile, the track commander of a FISTV (M981 track vehicle) took his combat observation/lasing team (COLT) and established an observation point (OP) forward of a phase line. He conducted a map recon of the route he wanted to follow to the OP. He chose 0200 as the start point (SP) time for his mission.

At approximately 2030, the infantry company moved to their screen position for the upcoming operation. A team of five dismounted soldiers was assigned to the right flank of the platoon's position. They established and manned a

forward OP 20-30 meters to the right front of their Bradley Fighting Vehicle. At 2230, the order came to reduce the security level to 50 percent. For the dismounted soldiers, this meant that there would be half the soldiers awake and on security at all times.

At 0200 with zero percent illumination, the FISTV, followed by an NTC observer controller (OC), crossed their SP in blackout drive and traveled toward the phase line. The FISTV traveled for approximately 50 minutes when the driver and track commander observed chem-lights on the ground to their front. The track commander instructed the driver to drive to the right of the chem-lights.

Simultaneously, as the FISTV turned to avoid the chem-lights, the OC saw two soldiers jump up from the ground as the vehicle's track ran over one soldier. The FISTV continued on with the mission thinking they had avoided the area and did not realize that a soldier had been run over. The FISTV continued for approximately 30 minutes until an OC made it a safety kill and informed the track commander of the accident.

This accident is an example of soldiers failing to follow established procedures. The company commander didn't ensure that up-and-alert guards were posted around the assembly area. In addition, both the driver and track commander failed to stop the FISTV and dismount ground guides after identifying chem-lights.

Army Regulation 385-55 states that tracked vehicle movement within or through an assembly area requires ground guides front and rear. Guides must be able to see each other and be visible to the driver.

■ A 5-ton dump truck (M929) was being utilized to move training mines and barbed wire from the engineer supply point (ESP) to an area where an infantry company was preparing defensive positions. There was no unusual sense of urgency regarding the need to prepare the defensive positions. The platoon leader issued his order for the squad to lay a barbed wire obstacle and minefield forward of the defensive position. They began the mission



by cutting logs into 3-to 4-inch sections to be used as training mines.

At approximately 1800, the squad leader arrived at the ESP with his squad and the 5-ton dump truck. The squad leader conducted an area reconnaissance for emplacement of the barbed wire and mines and briefed the platoon leader on his emplacement plan. The platoon leader and engineer squad leader discussed where the barrier was to be placed and how the infantry unit would support them with personnel for the work party. The engineer squad leader noted the area where the infantry soldiers were

preparing their fighting positions. The work party began extending a wire obstacle that had been started earlier. At approximately 0215 after completing that portion of the barrier, the infantry platoon leader instructed his platoon to get some sleep, except those on guard.

With the wire obstacle completed, the engineer squad began laying the training mines. The squad leader directed that the 5-ton dump truck remain on the gravel tank trails when it moved between the ESP and minefield. That directive was to ensure the vehicle remained clear of the infantry fighting position to the rear of the barrier area.

The vehicle made two trips from the minefield to the ESP with no problems noted. Prior to the third trip to the ESP, the engineer squad leader determined that driver #1 was too tired to safely operate the vehicle and made a decision to replace him with the original ground guide. Since driver #1 was familiar with the designated route, he was designated as the ground guide for the vehicle.

The 5-ton dump truck proceeded to the ESP and picked up the third load of mines. They departed the ESP for the minefield at approximately 0245. After crossing a hardstand road, the ground guide stepped onto the driver side running board and rode on the vehicle for 75 to 100 meters. The ground guide instructed the driver to stop the vehicle so he could dismount and survey a shortcut into the

minefield. The ground guide moved approximately 30 meters into the field without observing any infantry positions. The ground guide directed the driver to follow him into the field, and began to lead the vehicle to where he believed was the start of the minefield.

After proceeding approximately 10 meters, the ground guide noted there were troops in the area and told the driver to be careful. The ground guide guided the vehicle between two infantry positions and made a left turn.

At that time, the engineer squad leader observed the vehicle moving through the area

where the infantry soldiers were located and yelled at the ground guide. The ground guide stopped the vehicle and moved to the rear of the vehicle to talk with his squad leader. The engineer squad leader informed the ground guide that they were approximately 100 meters from the minefield and were going in the wrong direction. He further directed the ground guide to move the vehicle to the right onto the gravel road

and to proceed to the minefield.

As the squad leader was returning to the minefield, the ground guide returned to the vehicle and climbed onto the driver side running board and instructed the driver to make a right turn. The ground guide remained on the driver side running board as the vehicle began to move to the right. After moving 10 to 15 meters, the ground guide began to dismount the vehicle. At the same time, the driver saw what he perceived to be a soldier attempting to crawl away from the front of the vehicle, and he stopped the vehicle. The ground guide also saw the soldier moving away from the vehicle, and approached the soldier to ensure he was not injured. The soldier told the ground guide that the vehicle had nearly run over him as he and his fighting companion slept to the rear of their two-man fighting position.

The ground guide looked under the vehicle and saw that the front left tire of the vehicle had run over the second soldier. Efforts to revive the injured soldier were stopped as the infantry

Army Regulation 385-55 states that tracked vehicle movement within or through an assembly area requires ground guides front and rear. Guides must be able to see each other and be visible to the driver.

platoon medic determined that the soldier was obviously dead.

The primary driver of the 5-ton dump truck, functioning as the ground guide for the vehicle during operations, made an improper decision. He deviated from his squad leader's instructions and rode on the running board instead of following correct ground guide procedures. The driver of the 5-ton dump truck did not properly use his ground guide during night operations. In addition, he allowed his ground guide to ride on the driver side running board rather than walk at the left front of the vehicle to ensure safety of personnel.

Army Regulation 385-55 states that a vehicle operator must refuse to move a motor vehicle if anyone is in an unsafe position. (An unsafe position could be standing; attempting to ride between the cab and body; hanging on sides, running boards, or fenders; sitting on tailgates or sides of the truck; or extending arms or legs.)

Commanders who are responsible for conducting tactical operations (actual or training) involving Army motor vehicles or Army combat vehicles and equipment

will apply all normal safety standards unless it is necessary to deviate to accomplish a mission. In training situations, such deviations may be authorized only by the unit commander. The commander will use the risk-management process and evaluate the significance of the assumed risk versus the training benefit. Drivers and ground guides must be trained in standard hand-and-arm signals and flashlight signals before driving or guiding a vehicle. They also must know the importance of a ground guide and ground guide duties.

A ground guide's purpose is more than just to walk in front of the vehicle. He is the control measure (safety measure) put in place in a hazardous or risky situation. Performing ground guide duties correctly can help reduce or eliminate those risks. It is better to dismount a ground guide and complete the mission safely than to complete the mission minus a fellow soldier.

POC: SFC Erwin Bailey, Armor Safety Specialist, U.S. Army Safety Center, DSN 558-2908 (334-255-2908), bailey@safety-emh1.army.mil

New POV Video is Here

Not the usual Army training film, this new video deals with the major causes of highway accidents in real-world terms. Soldiers will relate to the upbeat, entertaining manner in which the message is delivered. It should be widely available at local audiovisual libraries now. Check it out by asking for "The Road Show," PIN 711133 or visit our web site at <http://safety.army.mil> for ordering instructions as well as a downloadable facilitator's guide and additional briefing ideas. ♦

POC: Ms. Rebecca Nolin, Media & Marketing Division, USASC, DSN 558-2073 (334-255-2073), nolinr@safety-emh1.army.mil



THE ROADSHOW

How Important is a Fire Extinguisher?

Rhetorical question, huh? Well, let me answer it. Quite possibly it is the single most important piece of equipment to have in our vehicles. It's on the "before" operation PMCS checklist. Read on and I'll share a real-life scenario with you.

Earlier this year, an M923 5-ton overturned and caught fire. Trapped inside were two soldiers. These individuals were students in a driver training course on a night blackout drive mission. There were 33 vehicles (4 instructor vehicles) and not one had a fire extinguisher on board. Although there were other contributing factors in this accident, the bottom line is these individuals were fatally burned without anyone attempting to extinguish the fire because not one fire extinguisher was available.

How many times does an accident of this nature have to happen to get our attention? Fellow noncommissioned officers, ONE is too many, WAKE UP! We are essentially allowing troops to train in an unsafe environment and it has proven to be deadly.

These vehicles should not have been dispatched without the safety equipment present and operational. In accordance with TM 9-2320-272-10, Table 2-2 Operator/Crew PMCS, the vehicles were not "fully mission capable" if the fire extinguishers were missing or damaged.

Having worked as an emergency medical technician, I know the first thing that is done at the start of a new shift is to check the siren, emergency lights, IV fluids, etc., to ensure all are present and in working order before we put that vehicle in operation. If any life-saving device/equipment is missing, the vehicle is deadlined and we use the backup or have it fixed. It could cost a life if any of the equipment is missing or nonoperative. The emergency equipment for our military vehicles is just as important.

Fellow noncommissioned officers, it is up to us to make it a priority and ensure training is as safe as possible. In addition to ensuring all vehicles have a fire extinguisher, also ensure that everyone is trained on its proper operation.

REMEMBER: You are not only responsible for your actions, but also those you lead.

LEAD BY EXAMPLE!

POC: SFC Charlotte Underwood, Chemical Safety Specialist, Ground Systems Division, USASC, DSN 558-3530 (334-255-3530), underwoc@safety-emh1.army.mil



New Safety Center Deputy Talks Risk Management

Editor's note: Colonel John S. Warren became Deputy Commander/Chief of Staff of the U.S. Army Safety Center on 1 April 1998.

I want the word to reach all soldiers that the Safety Center's philosophy is to protect the force through risk management. Risk management works. It is a proven, effective method of doing business. We must transition to a proactive approach to safety in which we truly take the risk-management process and integrate it into the Army culture and our way of life. It works in planning and executing military training and operations, and it works off-duty as well.

Risk management is a logic-based, common-sense process that will help commanders and other leaders make informed decisions on human, materiel, and environmental factors before, during, and after every operation. It is the leader's best tool for protecting the force.

While many 'old' warfighters associate risk management with the compliance-oriented safety 'inspection and rejection' policies of the past, the new warriors are finding that it has been simplified and is tailored into a user-friendlier tool. Safety professionals are now welcomed because they are not there in a compliance mode, but are truly there to assist in every way possible in the oversight of risk-management integration into all unit activities. Most importantly, risk management helps everyone accomplish their missions while saving lives and equipment.

The Safety Center can help commanders and other leaders with risk-management training. We provide risk-management publications such as *Countermeasure*, *Flightfax*, and *CAPP Report*; we have exportable safety course materials; e.g., CD-ROMs; and we produce videos that run the gamut of Army operations—aviation, ground, and civilian. We must change the way the Army thinks. That's a tall order. Is it worth it? If it saves a soldier's life, you bet it's worth it!

I agree with General Reimer when he said, "Risk management is not an add-on feature to the decision-making process, but rather a fully integrated element of planning and executing operations. ...Risk management helps us preserve combat power and retain the flexibility for bold and decisive action. Proper risk management is a combat multiplier that we can ill afford to squander."

Leaders have a responsibility to instill into the



hearts and minds of every soldier and civilian the basic principles of implementing the risk-management process. The first step is to integrate risk management into the planning, preparation, and execution of all operational missions. Secondly, make risk-management decisions at the appropriate level in the chain of command. And thirdly, accept no unnecessary risk. Leaders at all levels must decide whether to accept the level of residual risk to accomplish the mission.

I take my new duties very seriously and need your help. You are the safety experts and are in the organizations and positions where many of the Army's safety needs can best be identified. The Army must learn from past experiences if it is to avoid future accidental losses. Your ideas on how we can mutually support each other in the safety mission are always welcomed and encouraged. Working together as a unified team, we can all ensure that risk management is truly at the heart of our combined efforts by instituting programs to protect our soldiers, civilians, equipment, and installations from tragic accidents. ♦

—COL John S. Warren, USASC Deputy
Commander/Chief of Staff, DSN 558-3075 (334-
255-3075), warrenj@safety-emh1.army.mil

Safety of Use Messages

The following is a list of all safety of use messages (SOUMs) issued by Army Tank-Automotive Command (TACOM) for 2QFY98 and 3QFY98. Complete copies of all of the following messages are available from the Soldier's Support Network Internet website at www-ssn.ria.army.mil

■ **AMSTA-IM-O, 292036Z Jan 98, subject: SOUM, TACOM-WRN Control No. 98-02, crane, warehouse 10K.** Summary: Compliance with the instructions in this SOUM will close out TACOM-WRN SOUM 97-08 and take the subject cranes off deadline. SOUM provides instructions for inspecting the brake wheel cylinders and for properly bleeding the brakes. POC: James E. Jump, DSN 786-8901 (810-574-8901), jumpj@cc.tacom.army.mil

■ **AMSTA-IM-O, 231513Z Feb 98, subject: SOUM, TACOM-WRN Control No. 98-03, Defective trailer air brake supply valve for the LMTV/MTV of the FMTVs.** Summary: TACOM-WRN has received reports that a defective trailer air supply valve causes rear wheel spring brakes (and trailer brakes if towing) to engage without warning. Users are directed to conduct a 100 percent inspection of all FMTV models listed in subject message to identify those vehicles produced with suspected trailer air supply valves. POC: Ronald Ford, DSN 786-7539 (810-574-7539), fordr@cc.tacom.army.mil

■ **AMSTA-IM-O, 031339Z Mar 98, subject: SOUM, TACOM-WRN Control No. 98-04, Deadline message for the HMT.** Summary: Due to a defect in the drawbar, users are directed to immediately prohibit the use of all HMTs identified in the subject message, including the AN/MJQ-35A and PU-801A, until further notice. This message does not apply to the three TQG PU-PP systems mounted on the HMT chassis trailers. In addition, maximum speeds on cross-country operations must not exceed 20 MPH. POC: Robert Dziewit, DSN 786-8656 (810-574-8656), dziewitr@cc.tacom.army.mil

■ **AMSTA-IM-O, 10145Z Mar 98, subject: SOUM, TACOM-WRN Control No. 98-05, Technical, Possible defective driveline U-joint driveshafts used on the FMTVs.** Summary: Users are directed to conduct an immediate 100 percent inspection of all LMTV cargo vehicles listed in subject message to identify those vehicles with suspect rear driveshafts. Effective immediately, a maximum driving speed of 30 MPH is imposed until further notice. This SOUM provides inspection criteria, reporting

procedures, and contractor points of contact. POC: Ronald Ford, DSN 786-7539 (810-574-7539), fordr@cc.tacom.army.mil

■ **AMSTA-IM-O, 191131Z Mar 98, subject: SOUM, TACOM-WRN Control No. 98-06, Deadline the HMT.** Summary: This message clarifies the deadlining criteria and model information provided in TACOM-WRN SOUM Control No. 98-04. POC: Robert Dziewit, DSN 786-8656 (810-574-8656), dziewitr@cc.tacom.army.mil

■ **AMSTA-IM-O, 171743Z Jun 98, subject: SOUM, TACOM-WRN Control No. 98-07, Operational, Safe operating speeds for the M939 family of vehicles.** Summary: This SOUM reiterates maximum safe operating speeds and braking procedures and also provides additional warnings and safety information that must be inserted into the appropriate technical manuals. POC: Katie Gorski, DSN 786-8647 (810-574-8647), gorskik@cc.tacom.army.mil

■ **AMSTA-IM-O, 271203Z Apr 98, subject: SOUM, TACOM-WRN Control No. 98-08, Technical, Update to TACOM-WRN SOUM Control No. 98-05, DTG 101451Z Mar 98.** Potential catastrophic driveline failure on driveshafts used on the FMTVs. Summary: This message is an update on TACOM's effort to determine the cause and solution to prevent further driveshaft/drivetrain failures and provides additional guidance and inspection procedures. The 30-MPH speed limit restriction on all 2½ ton LMTV cargoes remains in effect. POC: Ronald Ford, DSN 786-7539 (810-574-7539), fordr@cc.tacom.army.mil

■ **AMSTA-IM-O, 271216Z May 98, subject: SOUM, TACOM-WRN Control No. 98-09, Technical, Potential catastrophic driveline failure on driveshafts used on the FMTVs.** Summary: A thorough study of the 2½ ton LMTV has indicated that the 5-ton exhibits the same powerpack bending that has caused catastrophic failures of the driveline in the 2½ ton LMTV. Thus, the potential for the failure exists in the 5-ton as well. SOUM requires users to conduct a 100 percent inspection of all MTV vehicles listed

in the subject message. A maximum speed restriction of 30 MPH is imposed on all 5-ton MTV vehicles. POC: Ronald Ford, DSN 786-7539 (810-574-7539), fordr@cc.tacom.army.mil

■ **AMSTA-IM-O, 021217Z Jun 98, subject: SOUM, TACOM-WRN Control No. 98-10, Technical, Retread non-directional cross-country (NDCC) bias-ply tire used on various vehicles.** Summary: Recent testing for the national retread program and field reports have shown that subject retread NDCC bias-ply tires experience a high rate of failure. This SOUM requires users to inspect all vehicles within 5 days of receipt of this message, remove all retread NDCC bias-ply tires from steering axles and single wheel non-steering axles within 30

days and replace them with non-retread tires or the vehicle is considered non-mission capable. POC: Ralph E. Eldridge, DSN 786-8379 (810-574-8379), eldridge@cc.tacom.army.mil

■ **AMSTA-IM-O, 171743Z Jun 98, subject: SOUM, TACOM-WRN Control No. 98-11, Operational, Vessel affected: NDI large tug, 128'.** Summary: The current configuration of the Army large tug has been identified as having several design-related problems, all of which may have an adverse systemic effect on vessel stability. SOUM provides references, procedures, and guidance to maximize the stability and safe operation of the vessel. POC: Steve Dull Jr., DSN 786-8512 (810-574-8512), dulls@cc.tacom.army.mil ♦

Urgent Safety Message

M34 Blasting Machine

Deadline M34 Blasting Machine. TACOM-ACALA Rock Island, IL, AMSTA-AC-SF, 231846Z Jul 98, SOUM 98-05. This SOUM deadlines M34 Blasting Machines manufactured by Minowitz Manufacturing and all M34s for which the manufacturer cannot be identified. The M34



Blasting Machine, NSN 1375-00-567-0223, has demonstrated a safety problem.

A measurable voltage is released to the terminals when:

- The bail lock is released to allow the handle of the blasting machine to extend to the ready position.

- The handle is squeezed one time. This voltage is sufficient to detonate a blasting cap if it is connected to the machine when deployed.

Minowitz M34 Blasting Machines are identified by a lot number either etched or stamped on the bottom of the machine beginning with MMW. If you have a Minowitz Blasting Machine or a blasting machine that cannot be identified as manufactured by a company other than Minowitz, it must be removed from service until the machine can be tested. A detailed test procedure will be issued in a follow-up message when available.

There are in excess of 8000 blasting machines fielded that could fall into this category. This item is not separately issued, but is a component of two supply catalogs, SC 1375-95-A03, demolition kit (LIN F91490, NSN 1375-00-047-3150) and SC 1385-95-A03, EOD field maintenance set (LIN T57126, NSN 1385-01-095-5221), and used with mine clearing line charge (MICLIC, LIN L67342). ♦

POCs: Doug Heritage, DSN 793-1709, heritag@d@ria.army.mil or Don Wren, U.S. Army Safety Center, DSN 558-1122 (334-255-1122), wrend@safety-emh1.army.mil

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COUNTERMEASURE

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OCTOBER 1998

POV update
POV FATALITIES
THRU AUG FY 98 108
THRU AUG FY 97 81



Keep The Home Fires Burning . . . Safely

Although a crackling fire in the fireplace brings to mind a warm feeling and a cozy glow, it can be extremely dangerous. If unattended, it can be deadly. In less than five minutes, an entire house can be destroyed and precious lives tragically lost. It's crucial for families to know what to do in the event of a fire, but it's even more important to prevent them in the first place.

ARMY GROUND RISK-MANAGEMENT PUBLICATION
COUNTERMEASURE

The Official Safety Magazine for Army Ground Risk-Management

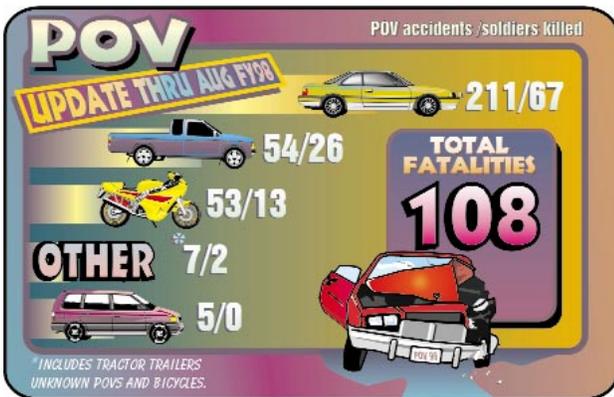
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Burt S. Tackaberry
Burt S. Tackaberry
 Brigadier General, U.S. Army
 Commanding Officer

Director's Corner



It's the beginning of another fiscal year, and if our past is any indication of our future, this will be an important year in safety. Why? Because accidents are still a major threat. The Army has downsized even as our missions have grown; consequently, every accident has become more expensive not only in terms of manpower and money, but also in terms of readiness.

Development of precision munitions and smart weapons has been and will continue to be responsible for a great deal of our military effectiveness. But all the technology in the world will not replace what is most important in our nation's defense—soldiers. Our ultimate smart weapon is still the individual soldier.

We have a vast wealth of talent in our Army today, which enables us to get the mission done—and done safely. Your leadership abilities help us do that. When I took command of the Safety Center a year ago, I published my bottom line leadership philosophy: Keep soldiers safe by active caring. I discussed the importance of paying attention to details, training to standards, maintaining integrity, and using common sense.

The most important factor is that leaders must get personally involved in their soldier's safety and welfare. Soldiers, not things, are important.

By the time this goes to press, I will be retired from the U.S. Army. All in all, my assignment as the Commanding General of the Safety Center has been a satisfying way to top off a 30-year career.

A look at the accident record over the past year shows tremendous improvement. The declining number of on-duty accidents indicates that safety professionals are doing their jobs well. I'd like to think that the Safety Center has helped by giving you some of the technical services and products needed to reduce accident losses.

As I approach retirement, I realize more and more what a fine group of safety professionals I've worked with over the last year. I'm going to miss the Army; I'm going to miss the Safety Center; but most of all, I'm going to miss working with you. ♦

"Mission First, Safety Always"

—BG Burt S. Tackaberry, Director of Army Safety

Keep The Home Fires Burning—Safely

According to the National Fire Protection Association, home fires cause more than 4,000 deaths and tens of thousands of injuries each year in the United States. Many of those incidents are caused from fireplaces, space heaters, and stoves.

Any fuel-burning system should be serviced by a professional at the beginning of the heating season to make sure that all systems are operating properly. The damper, vents, and chimney should be checked regularly to ensure proper operation. And always keep a fire extinguisher handy wherever there is a risk of fire. Here are some other suggestions for keeping the home fires safe.

Fireplaces

- Burn only wood. Paper or pine boughs can float out the chimney and ignite your roof or a neighboring home. Also, plastic, charcoal or styrofoam can produce toxic gases!

- Always use a sturdy screen when fireplace is in use.

- Never close the damper with hot ashes in the fireplace and be sure the fire is out before retiring for the evening.

- Follow the directions on the package if you use man-made logs. Never break a man-made log apart to quicken the fire.

Portable and other space heaters

Space heaters are used throughout the nation to increase the warmth in rooms. They do the job, but can be dangerous.

- Be sure your heater is in good working condition. All room heaters need frequent checkups and cleaning. A dirty or neglected heater is a critical fire hazard.

- Maintain adequate clearance (at least 3 feet) in all directions around space heaters.

- Never leave an operating heater unattended, especially near children and pets.

- Never dry clothes or other combustibles near heaters.

- Check electric heaters for frayed or split wires

and evidence of overheating.

Kerosene heaters

- Use only water-clear 1-K grade kerosene. The wrong fuel could burn hotter than the equipment's design limits.

- Never use gasoline. Even small amounts of gasoline or other volatile fuels or solvents mixed with kerosene can substantially increase the risk of a fire or an explosion.

- Never refuel the heater inside the home. Fill the tank outdoors, away from combustible materials, and only after the heater has been turned off and allowed to cool.

Do not fill the fuel tank above the FULL mark. The space above the FULL mark is to allow fuel expansion without causing leakage when the heater is operating. Wipe up fuel spills promptly.

- In case of a flare-up, activate the manual shut-off switch. If this does not extinguish the fire, leave the house immediately and call the fire department. Don't move the

heater or use water or a blanket to stop the fire.

- Use only in well-ventilated rooms, and open an outside window approximately an inch to permit fresh air to effectively dilute the pollutants below a level of concern.

- Always keep the wick clean and properly adjusted according to the manufacturer's instructions.

Stoves (wood and gas)

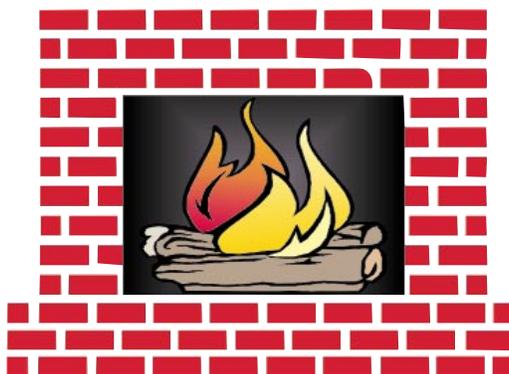
- Be sure the stove bears the label of a recognized testing laboratory and meets local fire codes.

- Follow the manufacturer's recommendations for proper installation, use, and maintenance.

- Periodically inspect and clean the chimney connections and flues.

- Never use a gas range or an oven to heat your home. Any unvented, fuel-burning appliance is capable of producing deadly levels of carbon monoxide.

- Check with local fire department and code officials before installing a wood stove. ♦



On The Home Front

Get Out and Stay Out—Your Life Depends On It!

You feel yourself waking up, but sense you're dreaming. The bedroom is dark and the air is still. Your throat is sore and it's hard to breathe. You know you left the light on in the kids' room, but you can't see it. You hear a noise, but the sound doesn't register. You ask yourself, "Am I dreaming, or is this really happening?"

As precious seconds pass, you begin to wake up. You recognize the sound of the smoke detector. The house is on fire! You jump out of bed and feel the intense heat. You remember your son's instruction from his fire-prevention class: "Crawl low in smoke, Daddy."

You get on the floor and realize Bobby was right. You shake your wife and scream, "The house is on fire! Get the kids." The room now is filled with black smoke. You need to find the doorway and get to the baby's room. Your heart beats faster, your body is covered with sweat, your eyes are burning and you're coughing. Anxiety builds. "Has the smoke already overcome the kids?" you wonder.

You jump up, run toward the doorway, and bounce off the wall. Back on the floor, your hands reach out into the blackened heat.

When you hear the baby crying, your senses take over, and you crawl toward the sound. You feel air moving and realize you're in the hallway. The sound gets louder.

Meanwhile, your wife is crying and clinging to your feet. Suddenly, you feel something; it's a wheel on the crib. You reach up and lift the baby. Down the hall, your son yells, "Mom, Dad, are you okay? Can you see the stairs?"

"Over here, Bobby," you reply. "Follow my voice."

Your son asks, "Is Mom okay?"

"Yes. Let's get out of the house.

I have the baby." By this time, sweat is dripping

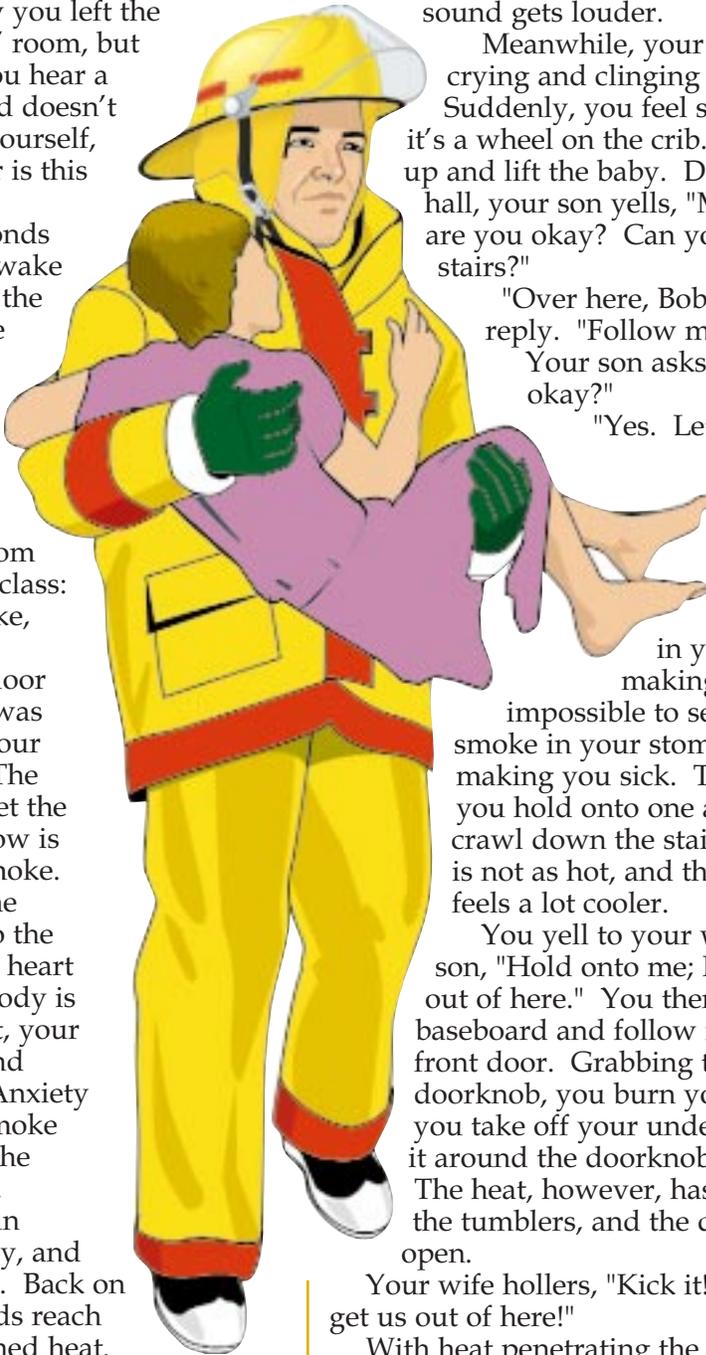
in your eyes, making it

impossible to see. The smoke in your stomach is making you sick. The four of you hold onto one another and crawl down the stairs. The air is not as hot, and the tile floor feels a lot cooler.

You yell to your wife and son, "Hold onto me; I'll get us out of here." You then feel for the baseboard and follow it to the front door. Grabbing the doorknob, you burn your hand, so you take off your undershirt, wrap it around the doorknob and turn. The heat, however, has expanded the tumblers, and the door won't open.

Your wife hollers, "Kick it! Kick it and get us out of here!"

With heat penetrating the undershirt,



you grasp the doorknob as hard as you can and turn. Finally, the doorknob gives, and the door opens. "Run! Run and call the neighbors! Get help," you urge. Looking back inside, you see an orange glow coming from the kitchen.

As the family wakes up the neighbors, you remember your wallet on the coffee table. You cover your mouth with the undershirt and start back into the house. A hand grabs your shoulder and holds you back, though. "Don't go back in," your neighbor begs. "You'll never make it out alive."

Moments later, you hear sirens in the distance. About the same time, you see flames break out at the back of the house. You feel helpless, yet gratified that you got yourself and family out alive.

Unfortunately, not all fire victims are as lucky as the ones in this fictitious account. Here's another accident with a very different ending.

"The smoke detector didn't work. Someone had removed it from the ceiling, taken out the batteries, and put it in an upstairs hall closet," lamented firefighters in another incident. The victim this time was a 5-year-old girl who had taken refuge in the closet.

The fire had started at 0730. The father woke up when he heard his children screaming and smelled smoke. Searching the heat and smoke, he found his 4-year-old son and took him outside. He then returned to locate the 5-year-old daughter, but the intense heat and flames drove him back. In his retreat, he seriously injured himself.

When the firefighters went inside, they found the little girl in the closet, one place many frightened children go during a fire. They also seek refuge in dresser drawers and under beds.

This tragedy could have been prevented if the family had practiced home fire safety. The purpose of Exit Drills In The Home (EDITH) is to train family members what to do in house fires. The concept teaches everyone how to get out; it also stresses the need to stay out.

—Adapted from **Safetyline**

Here are Some Other Tips to Remember:

- **Install smoke detectors.** Test them monthly and change the batteries yearly in models requiring them. For added safety, consider changing batteries twice a year. When detectors are missing or don't work properly, replace them.
- **Make an escape plan.** There's no time to waste in the fear, darkness, confusion, blinding smoke, and searing heat of a home fire. Plan ahead and at least twice a year, practice your fire-safety plan. Run some of the drills in darkness. Make sure your plan includes knowing two ways out of every room, especially bedrooms.
- **Get out fast!** Don't stop to do anything. Don't stop to call the fire department. Do that from a neighbor's house. Don't try to take possessions, just leave.
- **Stay low.** Crawl low under smoke because it contains deadly gases, which rise and fill rooms from the top down. The best air will be 12 to 24 inches off the floor.
- **Close all doors.** If you get trapped, close all doors between you and the fire. Stuff the cracks around doors and cover vents to keep the smoke out. Wait at a window and signal for help (if it's dark, use a flashlight). If there's a phone in the room where you're trapped, call the fire department and tell them exactly where you are.
- **Test every door.** Before opening a door, make sure there's no fire on the other side. Kneel or crouch at the door, reach up high, and use the back of your hand to touch the door. Also touch the doorknob and the space between the door and the frame. If any of these areas feel hot, use another way out. If everything feels cool, brace your shoulder against the door and open it carefully, being ready to slam it shut if heat or smoke rushes in. As you leave, close all doors behind you, which will slow down the spread of fire and smoke.
- **Don't use elevators.** In an apartment or office building, use stairways to leave the building. Never get in an elevator during a fire; it may stop between floors or even take you to the floor where the fire is burning.

Make fire safety a habit.

From The Troops

Fires Don't Have To Happen

As a firefighter, the fires that I most hate to see when I arrive on the scene are garage fires. The reason is that you never know what things are stored there and what hazards you may encounter. Even being fire conscious, I shudder to think what might explode if my garage were to catch on fire. Every day, the average consumer uses all kinds of laborsaving chemical formulations that are hazardous. This can range from disinfectants and tile cleaners to the gasoline used for our lawn mowers. There also seems to be a trend that the onetime used "miracle space-age chemical product," somehow finds its way to that homemade shelf in the garage. It gets put below the rusty, half-full can of lighter fluid, and in between the paint thinner and that purple, smelly stuff you used to fix that sprinkler head you ran over with the lawn mower. This chemical arsenal with its by-products being stored in our garage and the disposal of these products may be one of the most serious environmental problems facing the country today. In effect, we are each maintaining and continually restocking our own chemical warehouses.

The point is that dangerous, even toxic chemicals can lead to hazardous consequences for your family if not properly stored and disposed of when their shelf life is expired. Rusty cans that contain ether can explode just by opening them. The mixture of household ammonia and chlorine bleach makes a toxic gas. Simple pool chlorine and cola give off deadly chlorine gas. Powdered chlorine and brake fluids are highly flammable. Ammonium Nitrate (fertilizer) and fuel oil make a powerful explosive. That bag of charcoal you left out in the rain and put in the garage to dry could ignite on its own. Rags improperly disposed of with oil-based products (linseed oil) can self-heat and spontaneously ignite.

Don't take for granted the danger that could be lurking in your garage. Become proactive; clean your garage of unwanted, seldom-used chemicals. This could be your first step toward cleaning the environment and making this part of your house as safe as the rest of your home. ♦

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ABC...Easy As 1-2-3

What exactly is an ABC fire extinguisher and where can I get one? Fire extinguishers are generally rated to fight specific materials. An ABC fire extinguisher can safely be used to put out almost any fire that occurs in your home, including **Class A, B, or C fires. For example:**

■ **Class A** extinguishers fight ordinary combustibles such as wood, paper, cloth, and many plastics.

■ **Class B** extinguishers fight most liquid combustibles such as oil, grease and gasoline, as well as tars, paints, and flammable gases.

These are suitable for most fires caused by cooking.

■ **Class C** extinguishers fight electrical fires, including fires in wiring, fuse boxes, circuit breakers, and appliances.

An ABC fire extinguisher comes in a variety of sizes and from many different manufacturers. Generally, you can buy one at a hardware store, a home-improvement store, and wherever industrial fire equipment is sold. Also check with your local fire department for more information. ♦

What You Need To Know If Your Vehicle Catches Fire

When people talk about the problem of fires in the United States, they are usually referring to fires in buildings. They probably don't realize that one out of every five fires involves a motor vehicle, and that one of every eight fire fatalities occurs in motor vehicles. According to the United States Fire Administration, 600 people are killed in car fires each year and 3,800 people are injured—1,200 of those are firefighters.

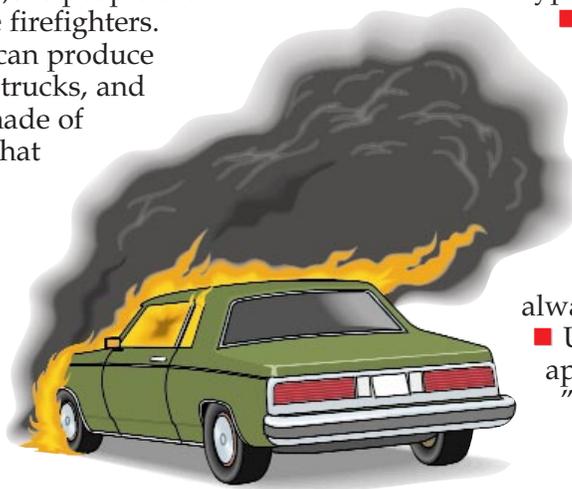
Fires in motor vehicles can produce toxic gases. Automobiles, trucks, and other motor vehicles are made of many synthetic materials that emit harmful—if not deadly—gases when they burn. A main by-product of fires is carbon monoxide, an odorless, colorless and tasteless gas that kills when present in high concentration.

A vehicle fire can generate heat upwards of 1500°F. Keep in mind that water boils at 212°F, and that most foods are cooked at temperatures less than 500°F. Flames from burning vehicles can often shoot out distances of 10 feet or more.

Parts of the vehicle can burst because of heat, shooting debris great distances. Bumpers and hatchback-door struts, two-piece tire rims, magnesium rims, drive shafts, grease seals, axles, and engine parts all can become lethal shrapnel.

Although a relatively rare happening, gas tanks of motor vehicles can rupture and spray flammable fuel, causing a serious hazard. In even more extraordinary instances, gas tanks have been known to explode. Hazardous materials such as battery acid can injure even without burning.

Vehicle fires are so dangerous that firefighters wear full protective, fire-resistant equipment and self-contained breathing apparatus. Firefighters also have the ability to quickly put out vehicle fires with large amounts of water or other extinguishing agents. You don't have these advantages, so use risk management when deciding to fight a motor vehicle fire.



Here are some of the things you should do if your vehicle catches fire:

- Get yourself and all others out of and away from the vehicle. If it is in a garage or other structure, exit immediately.
- After you are a safe distance away from the vehicle, call 911 or your local emergency telephone number and report the location and type of fire.

- Remain away from the vehicle. Do not try to go back into a burning vehicle to retrieve belongings.
- Never put yourself in danger using a fire extinguisher. If you use a fire extinguisher, only do so from a safe distance and always have a means to get away.
- Use a fire extinguisher approved for class "B" and class "C" fires.
- Do not open the hood or trunk if you suspect a fire under it. Air could rush in, enlarging the fire.

Fires in tactical vehicles can be dangerous as well. Unlike POV fires, tactical vehicle fires require an approach that is a little different. **There are a few standard procedures that should be addressed when dealing with tactical vehicle fires:**

- Stop the vehicle immediately.
- Follow the egress procedures as outlined in the appropriate technical manual.
- Get the hand-held fire extinguisher before dismounting vehicle, if possible.
- Activate automatic fire suppression system, if applicable.
- Move a safe distance away from vehicle.
- Account for all vehicle occupants.
- Attempt to extinguish fire if possible.

Remember that the safety of personnel is the first requirement when dealing with vehicle fires. Attempts to minimize property damage should be second priority. ♦

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Accident Reviews

Dangerously Comfortable

Complacency is self-satisfaction accompanied by unawareness of danger. It's an attitude we develop once we get familiar—and too comfortable—with our work environment. An example of this follows:

The brigade was nearing the end of their National Training Center (NTC) rotation. Their mission for the day was a brigade live-fire deliberate attack. This mission included a breach through a complex obstacle, followed by an attack to seize the objective.

The brigade chose to use two breach lanes to get through the obstacle. On the

southern lane, the engineers cleared a lane using a mine clearing line charge (MICLC). After the MICLC detonation, an engineer squad moved through and marked the lane so that the follow-on maneuver units could safely pass through.

Once the lane was marked, the engineer squad in their M113 occupied a covered and concealed position just forward of the lane exit. From this position, they could observe beyond the exit and provide local security for the forces behind them.

Two mechanized infantry companies were to pass through this lane as part of the lead task force. The first company passed through without incident. As the second company passed through, one of the M2 Bradleys rounded the final turn and moved toward the exit. The

commander identified the engineer M113 to his front, and he also saw what he thought was a pop-up target down range.

The Bradley continued moving forward toward the M113. The driver identified a path to the left of the M113 and planned on going around it. The commander told his gunner of the suspected target; the gunner dropped inside the turret.



Arrow indicates point where 25mm round struck the .50 caliber machine-gun mount, the commander's periscope, and other equipment stowed on top of the vehicle. The round continued through the driver's helmet, killing him.

Thinking he had received permission to engage the target, he took his 25mm M242 Bushmaster gun off safe and fired one round.

But there was no target downrange. The Bradley had closed within approximately 100 meters of the M113, which by this time was directly on the gun-target line. The 25mm round hit the very top of the M113, striking the .50 caliber machine-gun mount, the commander's periscope, and the other equipment stowed on top of the vehicle. It also hit the driver's head, killing him. The track commander was seriously injured by shrapnel from the machine-gun mount.

After his vehicle was hit, the commander dismounted the vehicle. His arm was bleeding heavily from an arterial wound, and combat lifesavers moved him behind the vehicle to perform first aid. They did not immediately know the condition of the driver. While the crew tended to the commander, the wounded driver lost pressure on the vehicle's brake pedal. The M113 began to move in reverse, running over one soldier's foot and causing another to fall between the tracks, with the vehicle passing directly over him. He was not injured. After moving about 150 feet backward, the remaining crewman inside the M113 jumped on top and stopped it by pulling the fuel cut-off switch.

What went wrong?

A combination of factors led to this tragic accident. Although this crew was experienced, had extensive gunnery training prior to the NTC mission, and scored "distinguished" on their last gunnery exercise, they failed to follow proper procedures. First, the Bradley commander (BC) did not properly coordinate his crew's activities. He had not used doctrinally correct fire

commands in accordance with FM 23-1 during this NTC rotation; instead, he and his gunner used an informal method of identifying and engaging targets.

A proper fire command includes several steps that ensure the proper target is engaged, and that the entire process is done safely. In accordance with FM 23-1, the elements of a fire command are:

- **Alert:** Tells the crew of an impending engagement.
- **Weapon/Ammo:** Tells the gunner which type of ammunition to use.
- **Description:** Identifies the target to the crew.

Complacency is an attitude we develop once we get familiar—and too comfortable—with our work environment.

- **Direction:** Guides the gunner to the target if the BC cannot lay the turret properly.
- **Range:** Tells the gunner which range to input
- **Execution:** The command of "Fire."
- **Termination:** Ends the particular engagement.

After the description (or direction if needed), the gunner notifies

the commander that he has positively identified the target by saying "Identified." The commander then confirms that the gun target line is clear, and that the gunner is aiming at the proper target. Only then does the commander issue the execution command "Fire."

In this situation, the commander and gunner did not use the proper sequence of commands and bypassed the built-in controls to ensure that it was safe to fire.

By using informal methods of engaging targets, the commander did not positively ensure that his gunner knew when to fire and when not to fire. There was no procedure in place for the gunner to know the commander's intent.

Finally, the M113 crew did not clear the immediate vicinity of the vehicle after dismounting. They did not check on the condition of the driver until after the M113 had unexpectedly moved in reverse. This caused additional injuries

to the soldiers treating the injured commander.

Summary

Fire commands exist for a reason. Use them whenever you are engaging a target, not just during qualification gunnery. Proper procedures include checks and balances to ensure a safe environment during engagements. A soldier was killed because a crew got too comfortable in their abilities and took shortcuts.

POC: MAJ Monroe B. Harden, Ground Systems and Accident Investigations Division, USASC, DSN 558-2919 (334-255-2919), hardenm@safety-emh1.army.mil

Heat Stress During High-Intensity Training

The 139-man, 12-mile road march was to be completed in three hours with full load carrying equipment (LCE) and weapons. This was their final stage of qualification for the Expert Infantryman Badge (EIB). Weather was expected to be hot and humid.

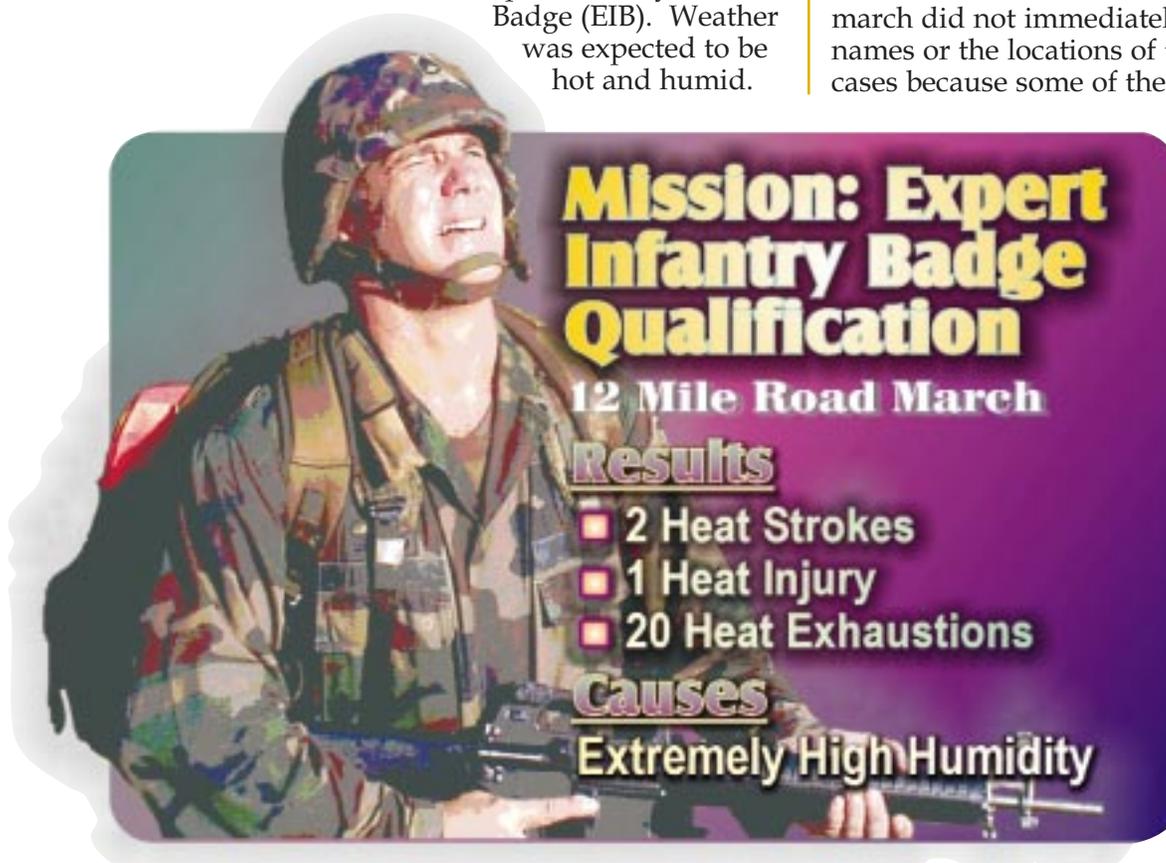
The route featured slopes ranging from 3 to 5 degrees on a relatively straight, loosely sanded path.

Due to anticipated high temperatures and humidity, the time of the march was moved up from 0630 to a 0330 departure time. Water points were established every $\frac{3}{4}$ mile along the route, and nine traffic control point (TCP) personnel were positioned along the course equipped with communication radios. A field litter ambulance (FLA) and two medical personnel were tasked just the night before to provide medical support for the march and therefore had not had time to rehearse a medical evacuation plan or to recon the route.

The EIB candidates had been briefed on proper hydration, rest, and sustenance. They were released the evening before and arrived for the evaluation with full-combat equipment, to include additional canteens and individual weapons.

Throughout the march, the assigned medics treated 20 candidates on-site for heat cramps and exhaustion. Seven candidates sustained heat injuries severe enough to warrant evacuation to the local medical clinic. The NCOIC for the march did not immediately learn of the names or the locations of the heat injury cases because some of the radios were

found to be inoperative, to include the FLA's. Due to the number of injuries, the sole FLA proved insufficient for evacuation purposes. In addition, TCP personnel were required to assist using other means such as privately owned vehicles



Mission: Expert Infantry Badge Qualification
12 Mile Road March
Results
■ 2 Heat Strokes
■ 1 Heat Injury
■ 20 Heat Exhaustions
Causes
Extremely High Humidity

(POVs), which happened to be at intersecting roads along the road march route.

Results

Of the seven soldiers medically evacuated, two were diagnosed as actually having suffered heat stroke requiring evacuation and intensive care unit (ICU) treatment at an appropriate medical facility. One soldier was rendered mentally and physically disabled for several days and may result in permanent, partially disabling injuries.

Sound risk management controls. This unit applied many solid risk management procedures:

■ Adjustment of activity schedules.

The time of the exercise was altered to avoid as much intense heat and humidity as possible.

■ **Sufficient fluid intake.** Water points were established at regular intervals to ensure water intake. Soldiers were instructed to prepare for the exercise by pre-hydrating appropriately. What may not yet be universal knowledge is that hydrating should start as much as 72 hours prior to exposure.

■ **Established control points.** Personnel manning eight control points ensured the soldiers followed the designated trail. Several of the control point personnel were combat lifesaver trained.

Shortcomings. Many controls were found to be ineffective because they were not properly implemented.

■ **Inadequate DA policies.** The appropriate study to identify the environmental heat hazards and risks associated with high-intensity training such as EIB and EFMB has not been conducted. As such, the applicable training policy has not been established for commanders to risk manage heat-exertion issues related to their training.

■ **Inadequate communication assets.** Positive communication was not established between the start/finish points and the control points along the route. The FLA's radio was also inoperative; therefore, communication was verbally relayed between control points.

■ **Insufficient medical personnel.** Although the two medics and one FLA met the local requirement for this

exercise, they proved inadequate to attend the number of heat injuries sustained.

Summary

Given the high humidity factor and the degree of difficulty of the exercise, there was a likelihood of at least one injury that would require evacuation. Alternate or additional provisions for both evacuation and treatment are a prudent measure to be considered for future training exercises. Also, given the distance and the high OPTEMPO of the exercise, positive communication is a must in monitoring candidates' progress and status. Communication devices and methods should be checked on-site for operational status to ensure functionality and dependability. ♦

POC: LTC Pete Simmons, Chief, Ground Systems Division, USASC, DSN 558-2926 (334-255-2926), simmons@safty-emh1.army.mil

Note from editor: The U.S. Army Research Institute for Environmental Medicine and the U.S. Army Center for Health Promotion and Preventive Medicine have produced an updated series of charts establishing guidelines for warm weather training and work categories. Although pending validation for Army operations, the charts were featured in consonance with the article, "Reduce Hazards of Heat Injuries," in the May 1998 edition of Countermeasure and updated in the July 1998 edition.

In the May issue, Countermeasure also cites other critical control measures such as acclimatization, physical fitness, and clothing that are often contingent upon personal perseverance. Unit training is generally conducted on an escalating basis, providing for acclimatization; but soldiers must personally monitor personal fitness and general health. Fatigue, consumption of alcohol and certain medicines, and excess weight all exacerbate the incidence of heat injury. Army training, unfortunately, does not leave choice of attire to the soldier's discretion; effective training requires wear of combat uniforms and often full gear. Soldiers can ensure that uniforms worn expressly for training fit as loosely and comfortably as possible to allow for maximum ventilation.

Safety Alert

Lithium Batteries

We continue to have incidents involving lithium sulfur-dioxide batteries that have been deadlined or restricted. It looks like some folks may not have gotten the word or haven't taken it to heart. Therefore, we are again calling the recent messages to your attention. They are summarized below.

SOUM 97-017 - Deadlined all BA-5590/U batteries manufactured by SAFT under contract DAAB07-90-C-C020.

SOUM 98-001 - Deadlined the BA-5800/U batteries manufactured by Ballard under contract DAAB07-90-C-C024. It further stated that the complete discharge device (CDD) is NOT to be activated.

GPM 98-002 - Prohibited the activation of the CDD for the BA-5600/U batteries manufactured by Ballard under contracts DAAB07-90-C-C028 and DAAB07-90-D-C045. These batteries are to be disposed of as regulated waste.

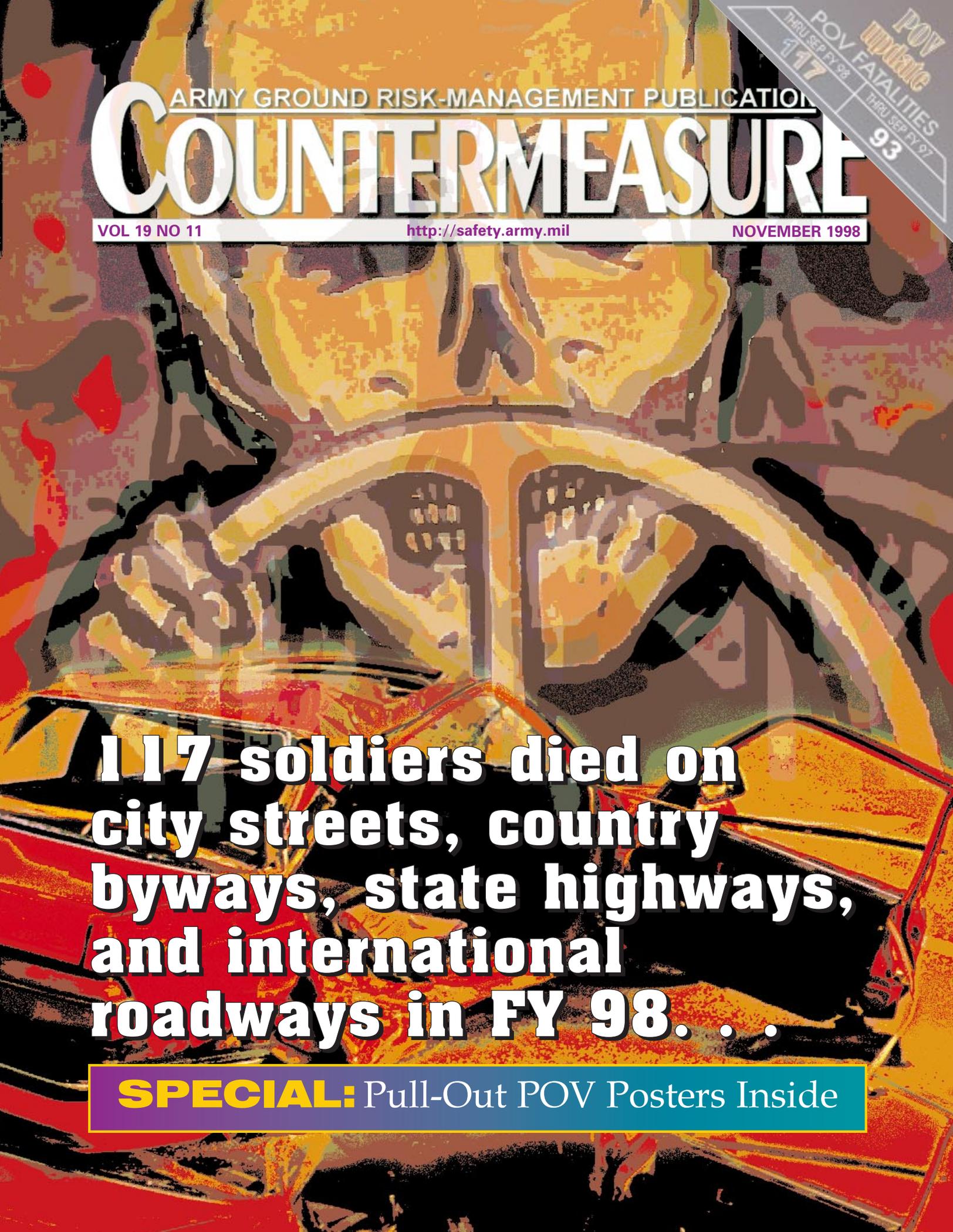
If you do not have these messages, they can be downloaded from the CECOM Directorate of Safety Risk Management (DSRM) Webpage at <http://www.monmouth.army.mil/cecom/safety>

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WARNING

Death, serious injury, or damage to Army equipment will occur if actions specified in these messages are not implemented.



ARMY GROUND RISK-MANAGEMENT PUBLICATION

COUNTERMEASURE

VOL 19 NO 11

<http://safety.army.mil>

NOVEMBER 1998

POV
INDICATING
THRU SEP FY 98
117
POV FATALITIES
THRU SEP FY 97
93

117 soldiers died on city streets, country byways, state highways, and international roadways in FY 98. . .

SPECIAL: Pull-Out POV Posters Inside

ARMY GROUND RISK-MANAGEMENT PUBLICATION
COUNTERMEASURE

The Official Safety Magazine for Army Ground Risk-Management

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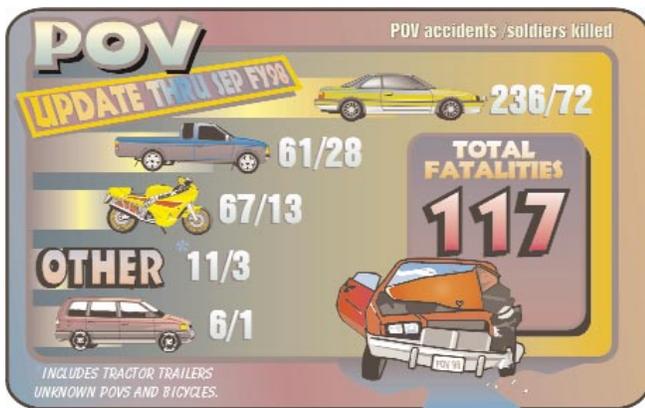
Mike Wilkins
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Charles M. Burke
Brigadier General, U.S. Army
Commanding Officer

From the Editor

Year after year, more soldiers are killed in privately-owned vehicle (POV) mishaps than in all other Army accidents.

Army accident records reveal the grim truth: soldiers continue to ignore speed limits, shrug off the “zzz-monster” of fatigue, travel too fast for weather and road conditions, leave seatbelts unbuckled, and yes—continue to mix alcohol with car keys.

Despite knowing what the major accident causes are, POV accidents continue to kill our soldiers. Any commander who has experienced the loss of a soldier understands that he has lost an important member of the Army family. He is often left with the question, “Did I do enough to prevent this from happening?”

There are many good programs that leaders can establish to keep high-risk drivers under control. Designated driver programs and unit on-the-spot safety inspections are good starting points. But just identifying hazards won’t save a soldier’s life. Leader involvement is key in gaining control and stopping this tragic loss of life.

General Dennis J. Reimer, Army Chief of Staff, has directed that commanders and leaders use the following six-point model POV Safety Program in every unit:

- **Command Emphasis.** Know your soldiers—assert positive, hands-on leadership on how, when, and where soldiers operate their POVs.
- **Standards.** Set and *enforce* high standards.
- **Provide Alternatives.** Provide soldiers some alternatives rather than driving POVs.
- **Discipline.** Conduct a records inspection to identify high-risk soldiers and take proactive measures to modify their risky behavior.
- **Risk Management.** Use the POV Toolbox to inculcate proactive risk-control measures. The toolbox is available at <http://safety.army.mil>
- **Commander’s Assessment.** Assess every POV fatality and serious injury accident with the chain of command.

Remember that your safety and well-being are important to us here at the Safety Center, as well as the Army and our nation.

Safety First!

Paula Allman

Roll Call!

This issue of Countermeasure recounts the 117 soldiers who died in POV accidents in fiscal year 1998. Most of the accident summaries cite the same causes of speed, fatigue, inattention, no seatbelts, and alcohol over and over again. These are vivid testaments to the fact that there are no new causes, just new victims – year after year after year.

■ PFC was killed while riding as a passenger in a car with a drunk driver. Driver drove off the side of the road and hit a mailbox.

■ PFC had been drinking throughout the night and was driving at an excessive rate of speed. He lost control of his vehicle and drove off the side of the road. Soldier was not using a seatbelt and was thrown from the car.

■ LTC died as a result of a motorcycle accident caused by improper braking.

■ SPC was killed when he lost control of his speeding POV, struck a wall, and overturned the vehicle. The soldier was not wearing his seatbelt and was thrown from the car.

■ SFC was killed when his speeding vehicle ran off the road and struck a pine tree and then a utility pole.

■ SPC, an experienced motorcycle rider, was killed when his motorcycle slid on a turn which had gravel and sand. He was thrown face first from the motorcycle into a rock formation.

■ CPT was killed when his vehicle left the side of the road and hit a guardrail, ejecting him when the driver's door swung open. Soldier was not wearing a seatbelt.

■ Cadet was killed when the driver of another vehicle fell asleep and crossed over the centerline, hitting the cadet's vehicle.

■ PV2 was pronounced dead on the scene when his POV was struck head-on by another vehicle in which the driver suffered a heart attack and drifted into the oncoming lane.

■ SFC died when he lost control of his vehicle, traveled across the median into oncoming traffic and collided head-on with another driver. There were no survivors.

■ SSG was killed when he struck a deer, lost control of his motorcycle, and rear-ended another vehicle.

■ SSG fell asleep or looked away from the roadway, crossed the centerline and collided with an oncoming tractor-trailer.

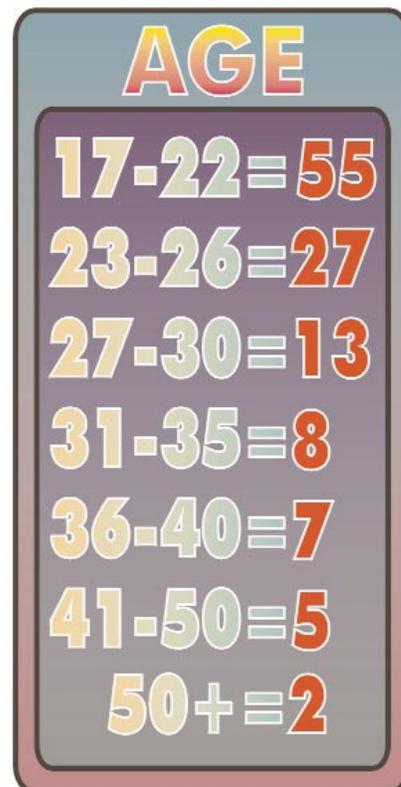
■ PV2 was killed while crossing a street in or near the crosswalk when a vehicle hit him.

■ SGT lost control of his vehicle, rolling it 2½ times while driving down a rural, two-lane road in the early morning.

■ PFC was killed while riding as a passenger in a car when the driver fell asleep at the wheel. The driver crossed over the centerline and collided head-on with another vehicle. After this crash, another vehicle struck the car a second time.

■ SPC and her unborn fetus were killed when she did not properly yield to traffic and collided with another vehicle. Her vehicle broke in half and she was thrown from the vehicle, ripping her seatbelt strap.

■ SPC was speeding at 85 mph and passing cars in front of him while intoxicated. He caused two cars to pull off to the side of the road to avoid an accident, and finally he had a head-on collision while driving in the



wrong lane. Both cars had no survivors.

■ **SPC** was driving at an excessive rate of speed when he attempted to stop and skidded out of control. The vehicle flipped and landed on its roof, killing him.

■ **SPC**, wearing proper reflective vest and helmet, was killed when another driver failed to yield the right-of-way to his motorcycle. Soldier was thrown 30 feet from his vehicle.

■ **SSG** fell asleep at the wheel en route to work at 0430. He was killed when he ran off the roadway and collided with a tree.

■ At approximately 0200, **PV2** and two other soldiers stopped to aid police officers in clearing an accident site. A drunk driver ran through the police barricade at over 70 mph killing the private.

■ **SSG** was driving his motorcycle at 95 mph when he hit a car attempting to make a turn. At impact, the sergeant was thrown 150 feet and was pronounced dead at the accident site.

■ **PVT** was killed when he lost control of his vehicle, left the roadway, and went into a pond.

RANK	
PVT	= 10
PV2	= 13
PFC	= 23
SPC	= 33
SGT	= 13
SSG	= 10
SFC	= 7
SGM	= 1
CW3	= 1
CADET	= 2
2LT	= 1
1LT	= 1
CPT	= 1
LTC	= 1

■ **SPC** lost control of his vehicle and struck a guardrail. His car overturned and he was ejected. Soldier was under the influence of alcohol and not wearing a seatbelt.

■ **PVT** experienced a mechanical problem with his car and pulled over to the shoulder of the highway to attempt to fix it. Another driver failed to see the private walking along the highway shoulder and struck him.

■ As the **SPC** was slowing down for traffic, she was rear-ended, forcing her car across the median and into a lane of oncoming traffic. She collided with a truck and was killed instantly.

■ **PFC** hit a patch of black ice and lost control of his car. His vehicle slipped into a ditch and rolled two times. He was not wearing a seatbelt and was ejected from the car.

■ **SGT** veered into the wrong lane and crashed head-on with a semi-tractor trailer. The accident totaled the car and killed the sergeant.

■ **PVT** was killed as he attempted to pass another vehicle and slid off the road. Soldier was not wearing a seatbelt and was thrown from his POV.

■ **1LT** and a group of people were attempting to move the lieutenant's vehicle off the interstate highway when a drunk driver swerved into the crowd, hitting the lieutenant.

■ **PFC** was driving two **SPCs** and another **PFC** home from a night of socializing at nightclubs. Everyone, including the driver, had been drinking. Their car (traveling at 90-100 mph) swerved across the centerline and collided head-on with a semi-tractor trailer. The driver was pinned behind the steering wheel and the occupants were ejected from the vehicle. Everyone in the car was killed.

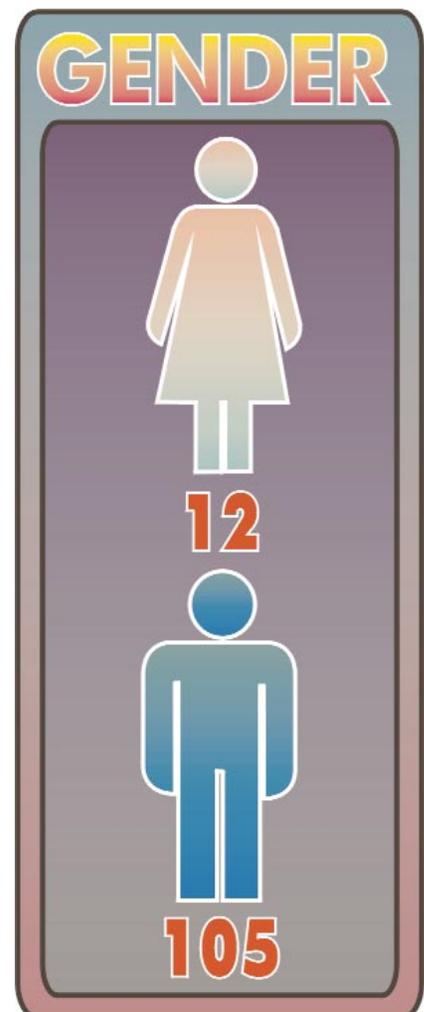
■ **PFC** was killed when he lost control of his POV while trying to negotiate a curve and driving too fast for road conditions. Soldier was under the influence of alcohol and not wearing his seatbelt.

■ **SFC** was weaving in and out of traffic on wet pavement at dark. Due to his erratic driving, the vehicle overturned and he was thrown from the vehicle. No seatbelt was used.

■ **PV2** was exceeding the posted speed limit by 35 mph when he lost control of his vehicle on a shallow curve and landed inverted in a pond where he drowned.

■ **SGT** lost control and rolled his vehicle at a highway intersection. He was not wearing his seatbelt and was thrown from the vehicle.

- **SGT**, a passenger in a car, was killed when the driver fell asleep at the wheel and drove off the side of the road.
- **PV2** was speeding and was intoxicated with a BAC of 0.13%. His car struck a concrete bridge guardrail and flipped. He was not wearing a seatbelt and was ejected.
- **PFC** fell asleep at the wheel and rolled his vehicle. Soldier was not wearing a seatbelt and died as a result of his injuries.
- **PVT** lost control while trying to pass a car. The car slid off the road and overturned in a small pond where the driver became trapped. He was pronounced dead at the scene.
- **PVT** was driving at a high rate of speed. While attempting to pass another vehicle, he went off into a grassy portion of the shoulder, lost control of his vehicle, crashed into another car, and was killed.
- **SGT** fell asleep at the wheel and ran off the side of the road. His vehicle rolled, throwing him into the oncoming lane of traffic where he was hit by an 18-wheeler and a passenger car. Soldier was not wearing a seatbelt.
- **PV2** crossed the centerline and collided head-on with a semi-truck. He was killed instantly.
- **PFC** failed to stay alert and keep his vehicle in the correct lane of traffic. Soldier crossed the center median, continued into the other lane of traffic, and was hit by another vehicle resulting in fatal injuries.
- **PFC** died when he fell out of the back of a pick-up truck and landed in the roadway and was subsequently hit by another vehicle. Soldier was under the influence of alcohol.
- **SSG** suffered fatal injuries when he drifted left of the centerline and hit another car. Soldier was under the influence of alcohol.
- **Cadet** suffered fatal head injuries when another vehicle turned in front of her motorcycle, failing to give her the right-of-way. She attempted to stop, but skidded into the other vehicle.
- Two soldiers, **PV2** and **SPC**, were killed when they crossed the centerline and collided with an oncoming tractor-trailer.
- **PFC** was killed when he lost control of his vehicle, crossed the center median, and struck another car head-on. Soldier was driving at a high rate of speed, under rainy conditions, and not using a seatbelt.
- **PV2** fell asleep at the wheel, failed to properly negotiate a curve, and subsequently traveled over 300 feet before impacting a large oak tree. The vehicle caught fire, consuming the driver and the car.
- **SFC** was killed in an off-set head-on collision when a vehicle crossed the centerline and sideswiped another vehicle before crashing into the soldier's vehicle.
- **SGT** was killed while walking down a road at night and was struck by a POV driven by a civilian under the influence of alcohol.
- **SPC** lost control of his vehicle while driving 80-90 mph, over-corrected his error, and struck a utility pole.
- **SPC** lost control of his vehicle in a curve and rolled four times. He was not wearing a seatbelt and sustained fatal injuries.
- **PFC** failed to notice that a vehicle he was trying to overtake with his motorcycle was making a left-hand turn. He crashed into the rear side of the vehicle and sustained fatal injuries.
- **SSG** was killed when a speeding POV struck him as he was riding his bicycle. Soldier was wearing all appropriate safety equipment.
- **PFC** was traveling too fast for road conditions when he failed to



CAUSES

SPEED

42

FATIGUE

21

ALCOHOL

19

IMPROPER
PASS/TURN/
BRAKE

12

ABRUPT
STEERING

7

FAILURE TO
YIELD/STOP/
STAY ALERT

5

DRIVING IN
WRONG LANE

5

UNLICENSED

3

NOTE: An accident can have more than one cause.

negotiate a curve properly and entered into a broadside skid, rolling into a ditch. He was not wearing his seatbelt and was ejected from the vehicle.

■ SPC attempted to swerve his motorcycle out of the path of a vehicle making a left-hand turn. He ran off the road into a commercial sign and was thrown into a utility pole.

■ PFC fell asleep at the wheel. His car crossed the centerline, hit a culvert, went airborne, and flipped.

■ SFC ran off the side of the road when his vehicle filled with smoke. He suffered 2nd and 3rd degree burns and died of smoke inhalation.

■ SPC was attempting to pass another vehicle when he realized that he did not have time to pass. He slammed on his brakes and hit the other vehicle, causing it to eventually roll on top of his vehicle, killing him.

■ 2LT was speeding and passing other vehicles in an unsafe manner when he lost control of his vehicle and struck an oncoming pick-up truck.

■ PVT ran off the side of the road, hit an exit sign, and then proceeded to cross two lanes of traffic and hit the guardrail in the center. Soldier was not wearing his seatbelt.

■ PFC drove his vehicle on the shoulder of the road and hit the guardrail, then crossed both lanes, became airborne, and collided with a tractor-trailer. Death was immediate upon impact.

■ PVT was killed when he attempted to pass another vehicle while that vehicle, in turn, attempted to pass another vehicle in front of it. Soldier lost control of his POV and rolled several times. He was not wearing his seatbelt and was thrown from the vehicle and pinned beneath.

■ SPC was walking on the Autobahn when he was hit by a vehicle. He was pronounced dead at the scene.

■ SPC was walking along the road when he was struck by an automobile. He was pronounced dead at the scene.

■ PVT collided with a school bus when he attempted to pass the vehicle in front of him.

■ SPC had been counseled 48 hours before his accident for being a high-risk driver. He was on post restriction, but did not follow this order. He drove off post, fell asleep at the wheel, and was involved in a fatal crash.

■ SPC was driving on a wet road at a high rate of speed when he lost control of his vehicle while negotiating a curve. The vehicle left the roadway, struck a tree, and he and a passenger were ejected when the seatbelts failed. The specialist was killed.

■ PFC was involved in a single car accident. He was pronounced dead at the scene.

■ Two PFCs were killed when the front tire of their vehicle blew out causing the driver to lose control of the vehicle. The vehicle crossed the centerline, ran off the side of the road,

flipped several times, and then hit a utility pole.

■ **PFC** was riding his motorcycle too fast for the road conditions. While attempting to make a turn, he lost control of his vehicle, dropped it to one side and collided with an approaching truck in the oncoming lane. Soldier died instantly.

■ **SGT** was killed in a hit and run accident when he apparently walked in his sleep and wandered onto a highway.

■ **SFC** was killed when a tractor-trailer suddenly pulled into her lane, causing her to swerve her vehicle into the left side of the highway. Soldier's vehicle rolled on its side and struck a tree. She was not wearing a seatbelt.

■ **SPC** failed to properly negotiate a curve and lost control of his vehicle. He struck a sign and then a tree. Soldier was killed when he was trapped inside his vehicle and it caught fire. He had a blood alcohol level of .22.

■ **SPC**, a passenger, was killed when a trailer broke loose from the vehicle in front of his. The driver swerved and lost control of his vehicle. The soldier was ejected and the car rolled over him. The specialist was not wearing a seatbelt.

■ **SPC** was driving across railroad tracks with warning lights and bells activated when a train collided with his POV, killing him and a child who was a passenger.

■ **SFC** apparently fell asleep at the wheel and drifted into the median. He made a sharp turn to avoid a collision and lost control of his vehicle. The vehicle overturned at least seven times, eventually pinning the soldier beneath. Both he and one of his daughters sustained fatal injuries.

■ **SPC** was killed when the wheels of her vehicle went slightly off the side of the road into dirt and gravel. She lost control of her vehicle, crossed the road, and hit a tree.

■ **SSG** was driving home late at night after a night of drinking at a bar. He drove off the side of the road into a ditch. Soldier was not wearing a seatbelt and was ejected from his car.

■ **SGT**, who was riding his motorcycle, accelerated around a curve to catch up with friends he was following. He crossed the centerline and collided with an oncoming vehicle. His injuries were fatal.

■ **SPC** was involved in a single car accident. He was pronounced dead at the scene.

■ Two **PV2s** were traveling at a high rate of speed in wet conditions. While negotiating a curve, the driver lost control of his POV and hit a tree, ejecting and killing both soldiers.

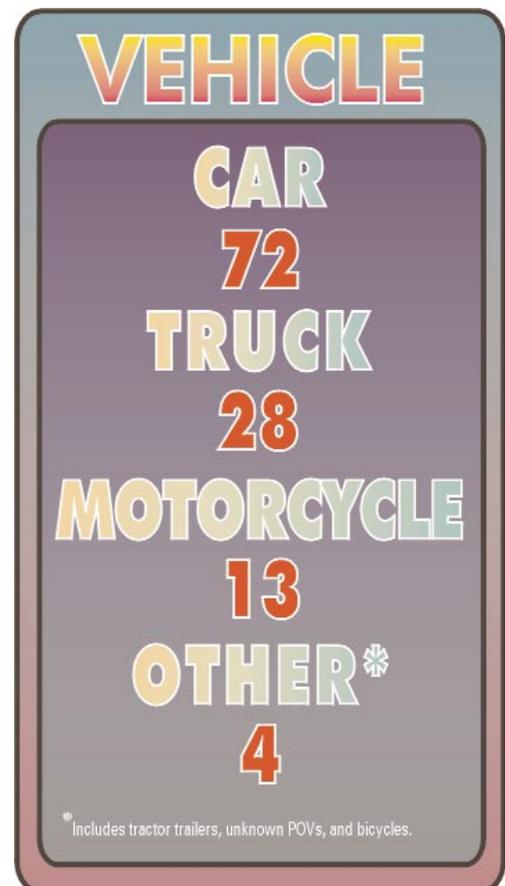
■ **SSG** was riding a borrowed motorcycle when he lost control and collided with a pole. He was pronounced dead at the scene.

■ **SPC** was killed when he lost control of his vehicle and struck a culvert. The vehicle overturned and the driver was ejected.

■ **SPC** lost control of his vehicle, hit the guardrail, crossed over into oncoming traffic, and struck another vehicle. He was pronounced dead shortly thereafter.

■ **PVT** was a passenger in a car traveling at a high rate of speed. The driver lost control of the vehicle on a curve, went off the road and hit a tree. Soldier was not wearing a seatbelt and was ejected from the vehicle.

■ **SGT** was killed when his vehicle left the road and struck a



utility pole. He was thrown from the vehicle and was later found by a utility worker.

■ **PFC** attempted to pass a vehicle in a no-passing zone. He tried to avoid oncoming traffic, but lost control and hit a tree. He was pronounced dead at the scene.

■ **SSG** suffered fatal injuries when his vehicle was hit broadside by a speeding vehicle that ran a stop sign.

■ **SPC** was en route to PT when his vehicle hit loose gravel, proceeded off the side of the road, rolled, hit an embankment, rolled again, and burst into flames. Second and third degree burns covered 50 percent of soldier's body. His injuries proved fatal.

■ **PFC** was involved in a two-car accident. His injuries were fatal.

■ **SPC** fell asleep with two of his friends in a truck bed while waiting for the driver to take them home after a night spent at a bar. On the ride home, the driver saw the soldier stand up in the truck bed and then lose his balance. He fell into the road and was subsequently hit by an oncoming tractor-trailer. He was pronounced dead at the scene.

■ **SPC** made an illegal U-turn and was hit by an oncoming tractor-trailer.

■ **PV2** was speeding and ran off the road. He sustained fatal injuries.

■ **SGT** was bicycling with her husband when an automobile struck them, killing the sergeant.

■ **SGT** was killed when a POV pulled in front of his motorcycle, causing a fatal collision. POV driver was suspected of being under the influence of alcohol.

■ **SPC** was killed when his motorcycle struck a legally-parked van.

■ **PV2** and **PFC** were involved in a fatal head-on collision with a semi-tractor trailer.

■ **SGM** was speeding and ran off the right side of the road and overturned three times. He was not wearing a seatbelt and was thrown from the vehicle.

■ **SGT** was driving his motorcycle approximately 100 mph when he lost control and was fatally injured on impact.

■ **PFC** was killed when he was hit by a drunk driver who ran a stop light and collided with his car.

■ **PVT** was working on a detail to remove banners from the side of a highway. As he crossed the highway to retrieve a banner, he was struck by an oncoming vehicle. He died about a month later.

■ **SPC** and **SSG** were operating a cargo vehicle in a convoy when they were struck by a swerving semi-tractor trailer. Both suffered fatal injuries.

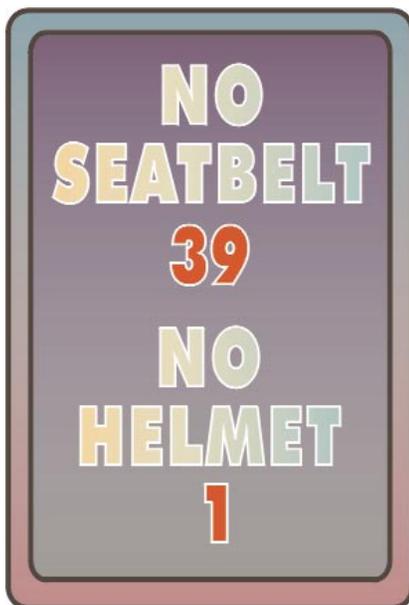
■ **PV2** was driving at a high rate of speed when his car ran off the side of the road. The crash was fatal.

■ **SGT** was hit by a tractor-trailer while attempting to cross the highway after exiting his wrecked, overturned vehicle.

■ **SPC** was crossing the street for PT formation when he was hit by a car.

■ **SPC** was a passenger in a car returning from a night of drinking. The driver failed to stop at a stop sign and lost control of his vehicle. The specialist was not wearing his seatbelt and was ejected from the car and killed.

■ **CW3** was ejected from his POV when another vehicle struck the side of his car causing it to roll several times. Soldier was not wearing a seatbelt and suffered fatal injuries. ♦



end of the day

who's driving?

You're in the driver's seat.
But are you in control?

<http://safety.army.mil> - Tools to even the odds

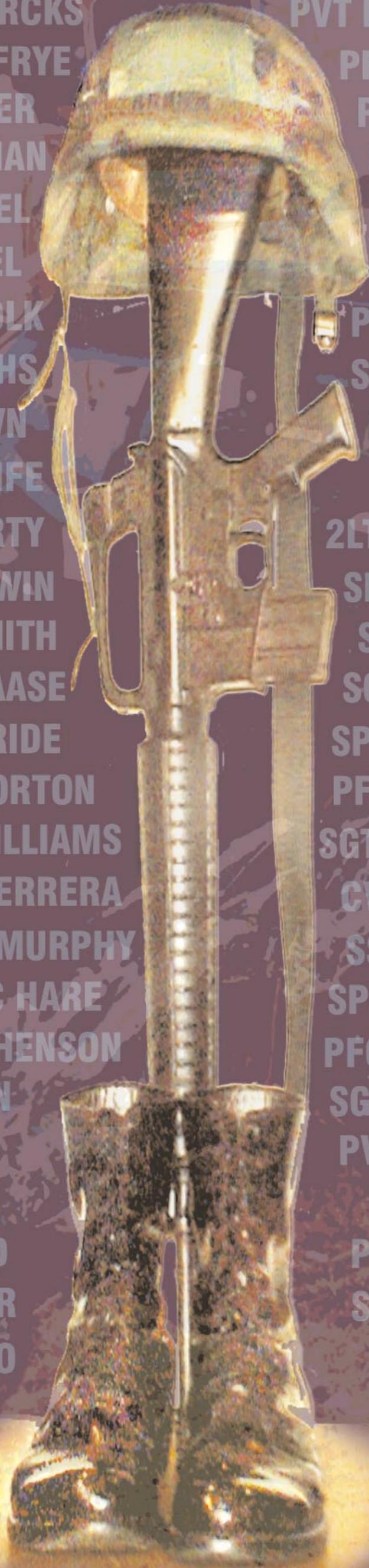


Speed
Fatigue
Inattention
No seatbelts
Alcohol

end of the week

closing time

PFC FRASHER SPC MARCKS
PFC STERNBERG SFC FRYE
PFC SMITH SPC HEGNER
SFC CHASE LTC KAYANAN
CPT POGUE SGT RANGEL
SSG ALLEN SPC CASSEL
PFC KERSHNER PFC FOLK
SSG McCRORY PV2 OCHS
SPC KOMAR PV2 BROWN
CADET HANSON PV2 FIFE
PV2 THOMAS SFC DORTY
PFC WILHOITE SGT IRWIN
SSG GONZALEZ SPC SMITH
SSG FLEMMING PVT BAASE
SPC SPOERL PVT McBRIDE
SPC BAUMGART 1LT HORTON
PFC PAQUETTE SGT WILLIAMS
SPC MARSHALL SGT HERRERA
PFC MALDONADO PFC MURPHY
PFC VANDERPOOL SPC HARE
SPC DeJONG PV2 STEPHENSON
SSG POWELL SGT PENN
PVT ORTELLANAZETINO
PVT SPIKES SPC LADD
PV2 DIXON SPC ELROD
PV2 COMBS PVT BAKER
PV2 SMITH SPC McCOO
SPC HORN SGT HINES
PFC GRAY PV2 RUIZ
SFC ANDERSON



PVT BREWSTER CADET BROWN
PFC STRADER SPC BERRIOS
PFC BATTLE SPC MURPHY
SFC WILSON SSG DUNBAR
SFC HYDER SPC HORSEY
SSG MANESS SFC ADAMS
PV2 JONES PVT REYNOLDS
SGT BROWN SPC JACKSON
PFC AADLAND SPC BAKER
PVT BRAZEL SPC SWART
2LT AGBAYANI SGT SLUSHER
SPC McDOWNEY SPC DAVIS
SPC McFARLAND PVT FINK
SGM HIDALGO SPC SHIELDS
SPC LUTHART PFC JACKSON
PFC BECNEL PFC BRATVOLD
SGT NEWKIRK SPC STEWART
CW3 KNIGHT PV2 BOHLING
SSG SCHIRMER PFC CLOUD
SPC TURNER SSG ENDERSON
PFC ESCOBEDO SSG HUGHES
SGT DEPRIEST SGT WEAVER
PV2 WOJCIK SGT HOLCOMB
SPC JORDAN SPC WHITE
PFC ARRINGTON PFC ROCK
SPC McINTYRE PV2 CLARK
SGT GOLDEN SPC DEVIN
PFC PAYNE SPC HEATH
PVT BERRY PFC DUBELL
SPC DIAZ-OQUENDO

"ONE BATTLE WE ARE NOT WINNING"

POV SAFETY IS A MATTER OF LIFE & DEATH

FY98 POV FATALITIES



ARMY GROUND RISK-MANAGEMENT PUBLICATION

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DECEMBER 1998

POV update
POV FATALITIES
THRU OCT FY 98
13
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Celebrate The Holidays With Risk-Management

Encouraging others to have a safe holiday season could be the best gift you can give this year. Take it upon yourself to be the designated driver at this year's Christmas or New Year's Eve party and possibly change lives forever. What a gift! The gift of a safe and responsible holiday season!

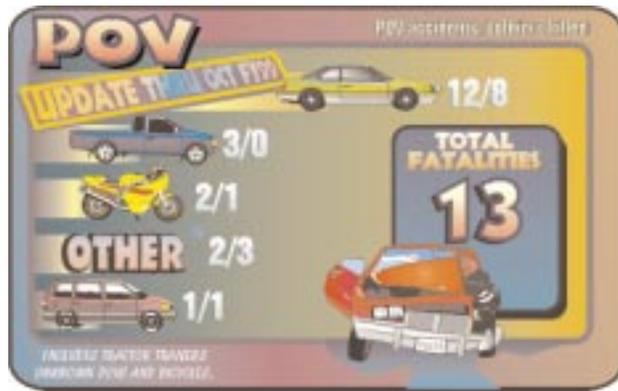
ARMY GROUND RISK-MANAGEMENT PUBLICATION
COUNTERMEASURE

The Official Safety Magazine for Army Ground Risk-Management

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Charles M. Burke
Charles M. Burke
 Brigadier General, U.S. Army
 Commanding Officer

From the Editor

Brrrrrr! Winter weather is here! In some areas, we are facing some of the worst weather of the year. Every winter, soldiers are hurt on- and off-duty in accidents attributed to weather conditions, complacency, and poor judgment. It's also the time of year when our thoughts turn to the holiday season and associated outdoor activities, including hunting and skiing.

Historical evidence indicates that we can expect an increase in accidents, injuries, and deaths during the winter. Statistics show the majority of these will occur during off-duty hours with most fatalities resulting from traffic accidents. These deaths and injuries do not have to occur!

Risk management can easily be practiced during winter weather. We must think about the consequences of all our actions and weigh the results of our decisions. There are few things worth risking a life for. Accidents result in pain and suffering for the victim, not to mention the mental anguish the person's family suffers. Take the few minutes necessary to make good decisions.

Prevention can be as simple as individual awareness. Know your limits. Plan your activities accordingly and follow the safety rules: winterize your car, drive defensively, wear your seatbelt, wear your helmet if riding a motorcycle, don't speed, and don't drink and drive – each is a small price to pay to stay alive.

Remember, don't take unnecessary risks – we are ultimately responsible for not only our personal safety, but the safety of our loved ones. Only common sense, self-discipline, and good judgment can ensure an enjoyable and safe winter.

On behalf of the Countermeasure staff and the U.S. Army Safety Center, best wishes for a safe and happy holiday season.

Safety First!

Paula Allman

Winter Driving Tips For The Holiday Season

The holiday season, with its intense activities, fosters accidents. Fatigue, inattention, speeding, and drinking and driving will take a toll because holidays are prime time for travel. The sad thing is, most traffic accidents are preventable. Normal safe driving habits should be modified to allow for these changing conditions. To reduce the risk of being involved in an accident, leaders should remind their soldiers of the following before allowing them to leave for a long weekend or other holiday period.

- Always buckle up.
- Make sure soldiers get plenty of rest and stay alert behind the wheel. When fatigue sets in, STOP and rest.
- Adjust speed for road and weather conditions.
- Don't drive impaired, whether from alcohol, drugs, or fatigue.
- When riding a motorcycle, wear personal protective equipment and follow the rules of the road.
- Pay attention to traffic conditions – never assume the right of way. Practice driving courtesy, even when others don't.
- Look ahead and leave an escape path. Be aware of your following distance at all times. Increase it accordingly as weather, traffic, and lighting dictate.
- Keep headlights on low beam when driving in fog, sleet or heavy snow, even in the daytime.
- Drive according to the conditions. Sudden lane changes or sharp turns can put you into a spin quickly on snow, sleet, and ice.
- When faced with an emergency, don't panic – remain calm.
- Don't apply brakes suddenly in case of a flat tire or blowout. Keep a tight grip on the steering wheel and resist the pull on the wheel from the flat tire. Slow down gradually, then ease off the roadway before stopping.
- **Most importantly, drive defensively.** Pay attention to your driving and possible actions of other drivers; anticipate what they could do wrong and plan what actions you might need to take to avoid involvement.

The most common mistakes drivers make in bad weather are driving too fast for conditions and underestimating stopping distances. The

best advice for driving in winter is to SLOW DOWN! Concentrate on safe, cautious driving.

Winterizing Your Car

Cold weather conditions also put a strain on vehicles. A few inexpensive preventive measures can make sure your car will perform well in winter weather.

- **Winterize your car.** Get it done now. Check your radiator and hoses for leaks and cracks. Make sure your water pump and thermostat work properly. Add a sufficient amount of antifreeze for the coldest weather (at least -30°F). Be sure your heater and defroster are operating properly.
- **Check your battery.** Batteries lose power as the temperature drops, so get a charge or get a new battery.
- **Make sure your tires are properly inflated and in good condition.** Snow tires are recommended, but chains can provide the best starting and stopping performances in severe snow and ice. If you use chains, they should be used on all four wheels.
- **Check your brakes.** Avoid slamming on the brakes. The way to stop while reducing the chance of skidding is to ease up on the gas and let engine compression brake the vehicle, using the brakes only when the vehicle has decelerated to a slow speed. Use an even, quick pumping action for rear-wheel drive and slow, steady pressure for front-wheel drive. In case of a skid, turn the front wheels in the direction of the skid.
NOTE: Antilock brake systems (ABS) require a different action by the driver: Read your owner's manual for further instructions.
- **Check your windshield area.** Wipers should have adequate arm tension and worn blades should be replaced. Make sure every glass surface is clear of snow and ice, and your visibility is good before you drive.
- **Have your muffler and exhaust system checked by a mechanic.** Carbon monoxide kills!

Arrive alive in '99!

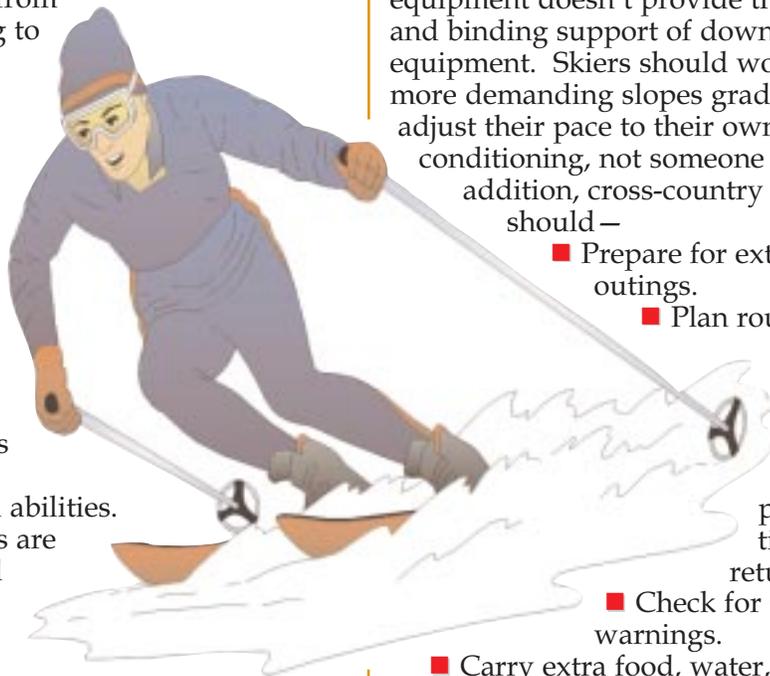
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Ski Safely Down The Mountain

Anyone can reach the top of a slope. It's getting down safely that can get tricky. According to the National Injury Information Clearinghouse, more than 40,000 skiers were treated in emergency rooms for injuries in one year alone. These skiers ranged in age from the very young to age 64.

Skiing is a demanding sport; skiers should be physically fit and properly conditioned before attempting to sail down the slopes. In addition, skiers **should—**

- Not over-ski abilities. Most ski slopes are clearly marked according to difficulty.
- Always seek basic instruction before attempting any form of skiing.
- Use properly fitted, adjusted, and maintained equipment. If renting,



ensure the shop is reliable.

- Watch for obstructions and other skiers.
- Be alert to changing weather conditions.

Cross-country skiing provides skiers a different type of challenge. The equipment doesn't provide the rigid boot and binding support of downhill-style equipment. Skiers should work up to more demanding slopes gradually and adjust their pace to their own level of conditioning, not someone else's. In addition, cross-country skiers

should—

- Prepare for extended outings.
- Plan route ahead of time and let someone know both the route and planned time of return.
- Check for avalanche warnings.
- Carry extra food, water, clothing, and an emergency survival kit with an avalanche-warning beacon.
- Always travel with a companion; use the buddy system. ♦

Skiers Need Protection From Cold

Because skiing takes place in cold climates, protection from the elements is extremely important. Skiers should pay particular attention to clothing and boots and observe the following:

- Dress in several layers of clothing; warm air trapped between layers provides lasting insulation.
- Protect cheeks, ears, and nose.
- Wear polarized sunglasses to prevent snow blindness.
- Boots should fit snugly enough to prevent heel lift or sideways movement, but not so tight that circulation is cut off.
- Know the signs, symptoms, and first-aid for cold-weather injuries.

Cold-Weather Injuries

Everything becomes more difficult under cold weather conditions. Tasks take longer and require more effort. Liquids freeze. Metal becomes brittle. And a leader's job of protecting soldiers gets tougher. Leaders must watch for early signs of cold stress in their soldiers. The most dangerous threats are shown in the chart below.

Cold-Weather Injuries		
Frostbite		
Cause	Symptoms	First Aid
<ul style="list-style-type: none"> Freezing of tissue, normally due to exposure below 32°F. 	<ul style="list-style-type: none"> Numbness in affected area. Tingling, blistered, swollen, or tender areas. Pale, yellowish, waxy-looking skin (grayish in dark-skinned soldiers). Frozen tissue that feels wooden to the touch. 	<ul style="list-style-type: none"> Warm affected area with direct body heat. Consult medical personnel as soon as possible. Do not thaw frozen areas if treatment will be delayed. Do not massage or rub affected areas. Do not wet the area or rub it with snow or ice. Do not expose affected area to open fire, stove, or any other intense heat source.
Chilblain		
Cause	Symptoms	First Aid
<ul style="list-style-type: none"> Repeated exposure of bare skin for prolonged periods to temperatures from 20° to 60° F (for those not acclimated to cold weather). 	<ul style="list-style-type: none"> Swollen red skin (or darkening of the skin in dark-skinned soldiers). Tender, hot skin, usually accompanied by itching. 	<ul style="list-style-type: none"> Warm affected area with direct body heat. Do not massage or rub affected areas. Do not wet the area or rub it with snow or ice. Do not expose affected area to open fire, stove, or any other intense heat source.
Immersion foot (trench foot)		
Cause	Symptoms	First Aid
<ul style="list-style-type: none"> Prolonged exposure of feet to wet conditions at temperatures between 32° and 60° F. Inactivity and damp socks and boots (or tightly laced boots that impair circulation) speed onset and severity. 	<ul style="list-style-type: none"> Cold, numb feet may progress to hot with shooting pains. Swelling, redness, and bleeding. 	<ul style="list-style-type: none"> Rewarm feet by exposing them to warm air. Evacuate victim to a medical facility. Do not massage, rub, moisten, or expose affected area to extreme heat.
Dehydration		
Cause	Symptoms	First Aid
<ul style="list-style-type: none"> Depletion of body fluids. 	<ul style="list-style-type: none"> Dizziness Weakness Blurred vision 	<ul style="list-style-type: none"> Replace lost water. Water should be sipped, not gulped. Get medical treatment.
Hypothermia		
Cause	Symptoms	First Aid
<ul style="list-style-type: none"> Prolonged cold exposure and body-heat loss. May occur at temperatures well above freezing, especially when a person is immersed in water. 	<ul style="list-style-type: none"> Lack of shivering. Drowsiness, mental slowness, lack of coordination. Can progress to unconsciousness, irregular heartbeat, and death. 	<ul style="list-style-type: none"> Strip off wet clothing and wrap victim in blankets or a sleeping bag. Place another person in sleeping bag as an additional heat source. Get victim to a heated location and medical treatment as soon as possible.

POC: MAJ Donald Lundy, USASC Industrial Hygienist, DSN 558-2443 (334-255-2443), lundyd@safety-emh1.army.mil

Don't Go Hunting For Trouble

Hunting with a rifle or shotgun is a dangerous sport under any circumstances, but it can be downright deadly for humans when hunters are not well trained or properly prepared. The Hunter Education Association recorded 137 fatal and 1,376 nonfatal hunting accidents this past year.

If you are among the millions of Americans who take to the fields with a loaded weapon, keep these things in mind.

Before you pick up a gun...

Begin your hunting experience by taking a firearms safety course available in your area. In some states, they are required before you can obtain a license. These courses can be valuable whether you are a novice or an experienced hunter.

Firearm basics

- Keep firearms unloaded and keep the action open until you are hunting. Carry guns in their cases to the shooting area. This is the law in most states.
- Always assume every firearm is loaded and dangerous. Respect it for the harm it can inflict.
- Never take someone else's word that a firearm is not loaded. Always check for

yourself.

- Never engage in horseplay with a firearm. Guns are deadly business and should be treated with a serious, cautious manner.

- Always point the muzzle in a "safe" direction. A safe direction is one in which, if fired accidentally, a weapon will not cause injury or damage.

Never point a gun at anything you don't intend to shoot.

- Be sure the barrel and mechanisms are clear of obstructions. This is best done by looking down from the breech end of the weapon.

- Be sure you use the proper ammunition for the weapon you are using, and know the maximum range of your ammunition.

In the hunting area

When carrying a gun, follow these simple rules:

- Keep the muzzle under control and pointed away from yourself and others.
- Be certain the safety is "on."

- Keep your fingers outside the trigger guard.

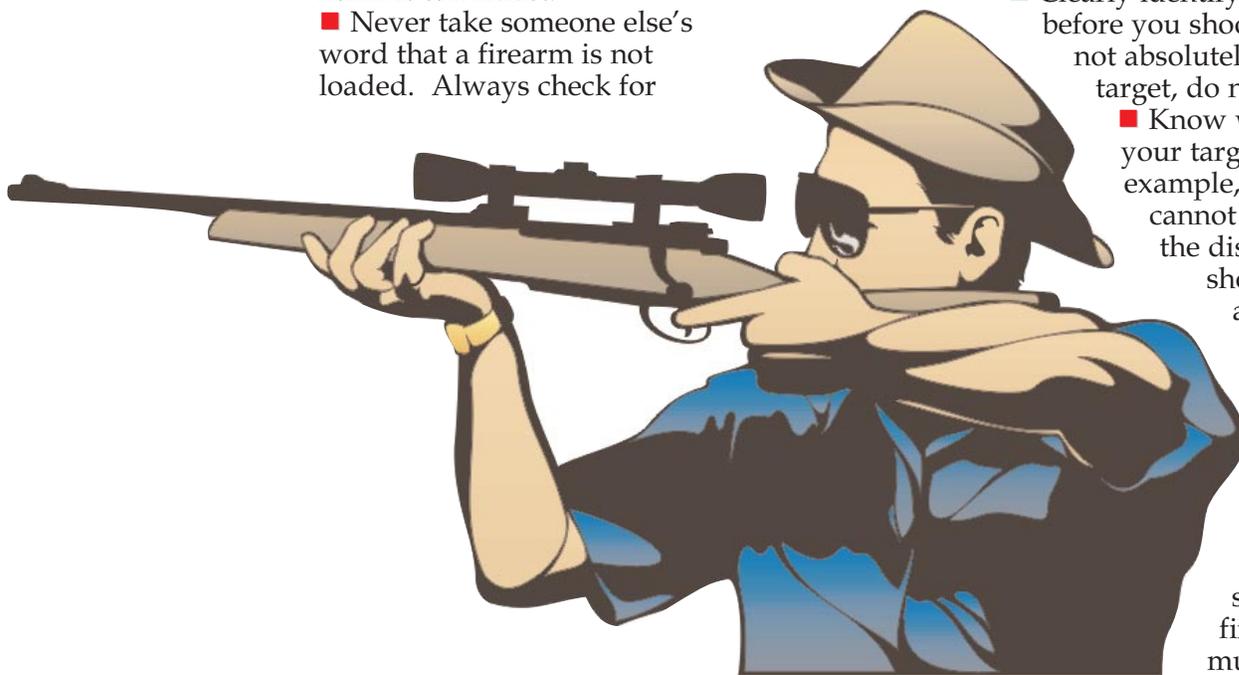
- Clearly identify your target before you shoot. If you are not absolutely sure of your target, do not shoot.

- Know what's beyond your target. For example, because you cannot see what's in the distance, don't shoot at an animal

standing on the horizon of a hill.

- Never shoot at a sound or a patch of color.

- When a shell does not fire, keep the muzzle pointed



in a safe direction for at least 45 seconds and then remove the cartridge.

■ Don't climb fences or trees, cross slippery areas, or jump ditches or creeks while carrying a loaded gun. Unload the firearm first. It takes only a few seconds, and it could save someone's life. If you are hunting with a partner, hand your gun to him before crossing the obstacle.

■ Never pull a firearm toward you by the muzzle.

■ Handguns should be carried in a holster.

■ Do not shoot at flat, hard surfaces or at water. Bullets will ricochet off these surfaces out of control. Remember, a bullet or shotgun shell is your responsibility from the instant it leaves

your gun.

■ Always shout to alert other hunters of your presence as they approach you. Never assume you are the only hunter in an area.

■ Be especially careful at the end of the day as you become tired and the firearm you are carrying becomes heavier. This fatigue can make you careless. If you feel tired—stop, unload your weapon, and rest.

■ Do not use alcohol, drugs, or medication which may impair your judgment and dull your senses.

■ Never pick up unexploded ordnance.

■ Follow established policies and procedures on military installations. ♦

—Adapted from **Safety Times**

Tree-Stand Safety Tips

Tree-stands can be a valuable tool for hunters, but only if they are used correctly and safely. Nationally, one in three hunting injuries involves tree-stands. Most of these incidents could have been prevented if the user of the tree-stand had followed these safety precautions.

■ Be sure to conduct pre-season and daily inspections of your tree-stand and related equipment before using it, especially those items that are removable.

—Paint removable bolts and wing-nuts a bright color, so if you drop them, you will be able to find them easily at the tree base.

—Carry spare bolts and connectors. The strength of the “biting end” of your tree-stand depends on all the hardware being present.

■ Always use a safety belt when hunting from tree-stands. They are best used when climbing up or down a tree. Safety belts should be the first and last things used.

Editor's note: Although wearing a safety belt does not eliminate the possibility of being involved in a tree-stand accident, it should minimize the potential for serious injury.

■ Never use a rope to replace a safety belt.

■ Never climb up or down a tree with a gun or bow.

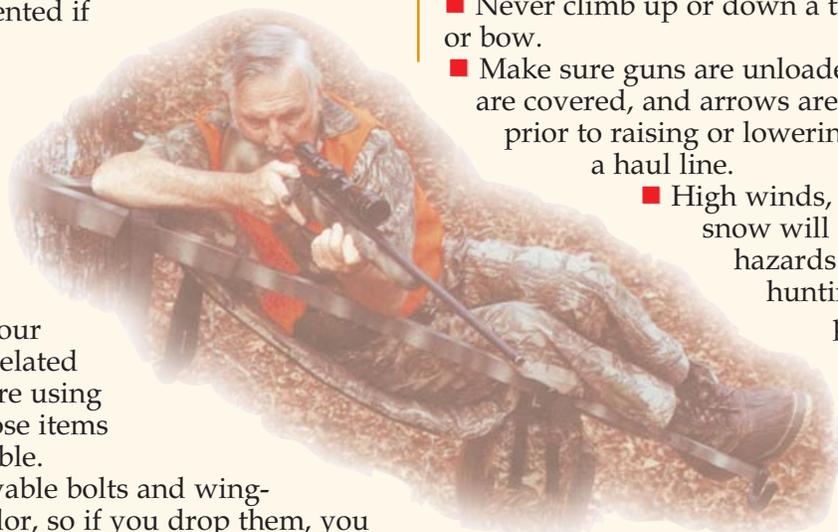
■ Make sure guns are unloaded, broadheads are covered, and arrows are not notched prior to raising or lowering weapons with a haul line.

■ High winds, rain, sleet and snow will increase the hazards of tree-stand hunting. A slippery platform will reduce the climber's ability to “bite” the tree while climbing or descending.

■ Always let someone know where you plan to hunt and when you will return.

Be a responsible sportsman. Use good judgment and exercise all safety precautions. ♦

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The World's Greatest Procrastinator

Prior to becoming a safety professional, I could put off until tomorrow what I should have done today with the best of them. I considered myself the world's greatest procrastinator—I enjoyed being that way. My wife often made comments to the effect that I was a little lazy, but I didn't listen to her.

I remember one day in particular when my procrastination created quite a bit of excitement in the neighborhood. It was a warm summer evening in early July. Hold on a minute—this episode really began about 3 weeks earlier. We came home from shopping for our newborn son. As we entered the house, my wife said, "What is that sound coming from the kitchen?" I said, "It sounds like the battery alert in the smoke alarm. I'll fix it later."

The clicking noise in the smoke alarm just about drove her crazy. I just kept telling her I would replace the battery tomorrow. Finally, the clicking stopped altogether, and she quit bugging me.

About a week later, the power went out while she was frying chicken on the range, and she forgot to remove the pan. It was Sunday, and I was busy reading my paper in the living room. She gave up trying to get me to check the fuse box and went to the bedroom to check on the baby. About 15 minutes later, the power came back on. Of course, I knew it would.

I finished reading the newspaper and decided to watch a ballgame on TV. Shortly thereafter, my wife came racing into the living room, carrying the baby and screaming, "Where is that smoke coming from?"

This time there was no procrastination. I jumped off the couch and observed a wall of heavy smoke against the ceiling. I realized it was coming from the kitchen. I told her to take the baby next door and call the fire department. She did, and I headed for the kitchen, grabbing the fire extinguisher I had thankfully mounted in the entryway after much procrastination.

I extinguished the fire on the stove and in the overhead cabinets. The fire department arrived and confirmed the fire was out. Their subsequent investigation revealed (you guessed it) that the grease in the frying pan caught fire, and because the batteries were dead, the smoke alarm did not function. I will never forget the lecture the fire chief gave me. Some of his words are not printable. By the way, this procrastination episode cost \$4,000 which could have been avoided by installing a \$1.50 battery.

Do you procrastinate? I guess we all do at times. However, we must all remember to be very careful about what we choose to procrastinate about. Take this from one who knows: I used to be the world's greatest, but I'll gladly pass the title on to you. ♦

—Adapted from *Road & Rec*



Don't Be A Pour Host

For many, free-flowing spirits will mar the holiday spirit of peace and goodwill. Under the influence of holiday merriment, some soldiers will drive home after partying without fully considering the possible consequences. Their impairment by the spirits of the season will cause a season of misery for the families of their victims.

But drunk driving accidents don't have to happen. Leaders can pass along the real holiday spirit by briefing their soldiers on the following:

Soldiers should make driving arrangements before going to a party. Prior planning will keep the holiday season safe as well as festive. Options include designated drivers (who won't be drinking that night), taxis or other public transportation, or "safe ride" programs.

Soldiers hosting parties should be responsible hosts. Since it's easier for

guests to get drunk than it is for them to get sober, a good host will also serve plenty of nonalcoholic beverages.

Hosts should plan to accommodate heavy drinkers overnight rather than sending them out to drive themselves home. Hosts can also offer safe alternatives to driving, such as calling a cab or "safe ride."

Hosts should remember not to urge their guests to "drink up." In some states, hosts can be held liable if they allow a drunken guest to drive away, and that guest then has an accident.

Hosts should also provide plenty of snacks. While a full stomach won't negate the effects of alcohol, it may delay them. Further, some guests won't drink as much if they have something to nibble on.

Soldiers with teens should also be advised to encourage them to avoid drinking and driving situations. ♦

I'll Be There!

It was two o'clock in the morning as I was snatched rudely from my slumber by the ringing of the telephone. Who in the world would be calling at this hour? Then a drunken, slurring voice came over the line, "Can you come get me? I'm drunk as hell."

The drive across town wasn't very exciting—until an intoxicated pedestrian staggered out in front of me and a drunk driver kept weaving into my lane most of the way. However, I finally got to you and your friends.

I was really upset when one of your friends burned a hole in the backseat of my car while trying to hang his head out of the window to throw up. And then you had the nerve to ask if we could all go to breakfast! There you were, stinking up the front seat with your beer breath and yelling out the

window at the "babes" in a Corvette at a stoplight.

No, this definitely wasn't a lot of fun, but you are my friend and losing sleep to come get you was a small sacrifice compared to what could have happened to you. You were not in a ditch somewhere or wrapped around a tree, bleeding, or maybe dead—you were right there beside me, drunk and obnoxious. . .but you were alive.

As I grabbed your shoulder and pulled your face away from the Vette and back into the car, I smiled to myself. Even in your drunken stupor, you had the sense to know I'd come. I smiled because I knew you'd do the same for me.

Editor's note: Remember there is no shame in having a friend care for you as a designated driver. It is the responsible and smart thing to do. ♦

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STOP!

**Don't
TOUCH**



DUDS

can Maim or KILL!

Outta my Way!

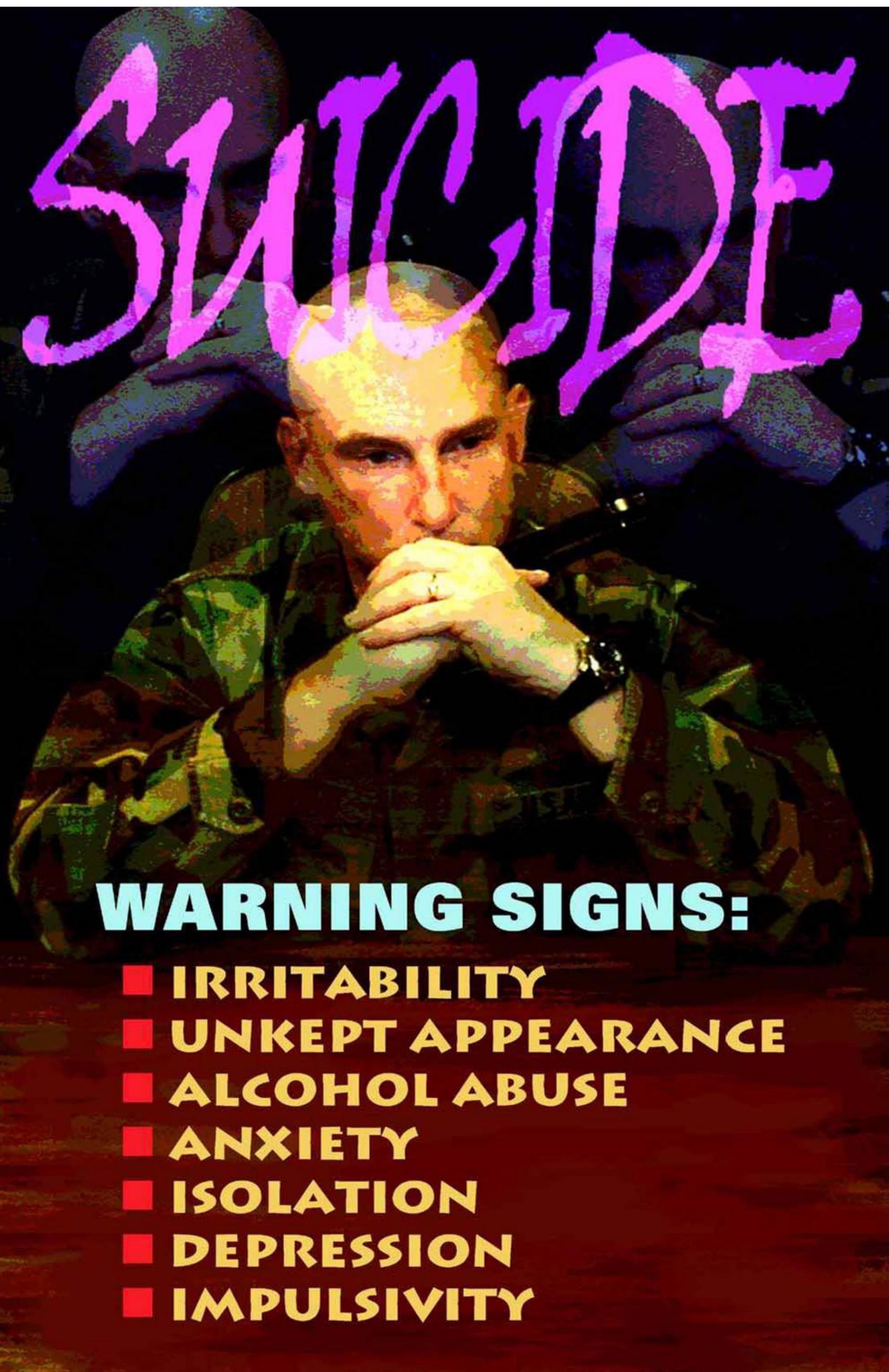


Don't Be An

**AGGRESSIVE
DRIVER!**

SPERM





STRESS

WARNING SIGNS:

- **IRRITABILITY**
- **UNKEPT APPEARANCE**
- **ALCOHOL ABUSE**
- **ANXIETY**
- **ISOLATION**
- **DEPRESSION**
- **IMPULSIVITY**