ARMY GROUND-ACCIDENT REPORT
COUNTERMEASURE
Volume 17 Number 12 December

Another banner year for the Army
FY 96 sets safety records

Army units have put new marks on the wall toward achieving world-class safety performance. FY 96 shows record lows in five major categories of accidents—

■ The total accident rate of 4.22 per 1,000 soldiers is down from the previous record-low rate of 4.98 set in FY 95.

■ The FY 96 Class A through C ground-accident rate continues downward, setting a record of 4.02 per 1,000 soldiers compared to the FY 95 all-time low of 4.79.

■ Army aviation set another record low in FY 96 with its lowest Class A flight rate ever: .65 per 100,000 flight hours. The previous low of .83 was set in FY 95.

■ Personnel-injury Class A through C accidents also recorded a new low of 2.51

compared to 3.05 in FY 95.

■ Civilian lost-time claims dropped to a new low of 22.83 from a previous low of 23.29 in FY 88.

Congratulations on another record-setting year. It was not an *accident*. Everyone is responsible for making safety happen, and you can take credit for your contribution.

Unreported accidents

The statistics look good, but they are also suspect. They are based on your reporting effectiveness. When you're up to your hips in alligators, doing more with less, it's easy to put off the admin stuff. That includes accident reporting. And there's a temptation after you've done that to say "It really won't make any difference, so I'll forget about it and take care of the 'gator that's chewing my leg." The thing is—it does make a difference.

We've got to know what's happening and why it has happened so we can identify trends and provide hazards and recommended controls to the rest of the Army. The overall downward trends are good, but how many accidents were not reported? That's something we've got to improve on, and we at the Safety Center are also working to make that happen. Future issues of *Countermeasure* will tell you more about things we're doing to reorganize our assets and be more responsive to your needs. We're going to make the reporting system more user friendly, and we're also going to make it easier for you to retrieve information from the Army's safety data base.

Safety is not just leaders' business—everyone makes safety happen!

We've got some alligators of our own

We're going to do some alligator (make that dinosaur) slaying of our own, getting rid of the cumbersome main frame computer system and replacing it with a more responsive relational data base to serve you.

That's our part. Your part is to do a better job of reporting. But that's still reactive stuff. Let's talk about preventing accidents so that there are fewer to report in the first place. That brings us to the proactive approach to business—risk management.

Risk management

Did I hear you say "That again?" Absolutely, positively, undeniably, because that's how it has to be done. We've already made some real strides, but we've still got a long way to go.

We have found that "risk assessment" is pretty well understood in the field. People are identifying hazards and assessing risks—the trouble is, it often stops there. And when it does, that means no controls have been designed during the decision step to implement so therefore no supervision takes place to ensure that the controls are used.

By firmly fixing risk management into all of the Army's processes—decision making, training management, force protection, personnel assignments, maintenance, et al—we can stop killing soldiers and destroying equipment. It can be done, and we're going to do it; we just need to get on with it. Until we can institutionalize risk management (and that's just a big word that means we've got to get into the head space of every leader, every soldier, every civilian, every contractor and make risk management an intuitive part of everything we do) we will never get it into our off-duty behavior so that we can stop losing people to the greatest hazard to soldiers. POV fatalities are 67 percent (130 soldiers) of all FY 96 fatalities.

So I've told you that **you did good.** But I'm also telling you that we can do better. We can't go on letting trucks roll over because drivers were poorly trained; we can't let paratroopers die because the unit didn't enforce the standards; we can't let soldiers be crushed by tank turrets or between vehicles because communication broke down; we can't do any of the things that cause soldiers to be injured or killed. Everyone is an important member of the team. Teammates don't let their buddies down.

World-class performance in safety is not losing our nation's most precious resources—its sons and daughters—to an unplanned behavior or condition called an accident. World-class performance is achieved through a combination of proactive leadership, tasks performed to standard, teamwork, effective communications, and a process to identify hazards and implement controls called risk management. Safety is not just leaders' business—everyone makes safety happen! Just do it, and FY 97 will be world class. ♦

—BG Thomas J. Konitzer, Director of Army Safety

"I'm gonna live forever"

Those of you who remember the TV show "Fame" will recall the faces of young people as they sang this opening song. It's an easy transition to see the faces of young soldiers because they, too, somehow feel "I'm gonna live forever." Certainly, they don't expect to die in their own vehicles. But they do. In FY 96, 130 soldiers died in POVs, that's 67 percent of all Army accident fatalities. The POV fatality rate increased by 17 percent over FY 95. These 130 soldiers are about the equivalent of a headquarters and headquarters company in an infantry battalion.

Who are these soldiers?

Forty percent of the Army population are soldiers in grades E1 through E5 and the ages of 18 to 25. Sixty-six percent of the soldiers killed in POV accidents fall in this 40 percent of the population. The greatest contributing factors are speed, fatigue, and nonuse of seatbelts.

Speed

A question naturally arises as to whether there is any relationship between the increase in Army military personnel POV fatalities and the recently increased speed limits in most of the U.S. According to the National Highway Traffic Safety Administration there is some relationship between increasing state speed limits and fatal POV accidents, however, this does not appear to be the central reason for the Army's increase in POV fatalities. Personal attitude and lack of *self-discipline* are the main contributing factors. Drivers who tend to speed will do so regardless of what the posted speed limit says. POV fatalities will continue to increase until a fundamental change in the thinking process prompts a change in personal attitude and discipline.

Fatigue

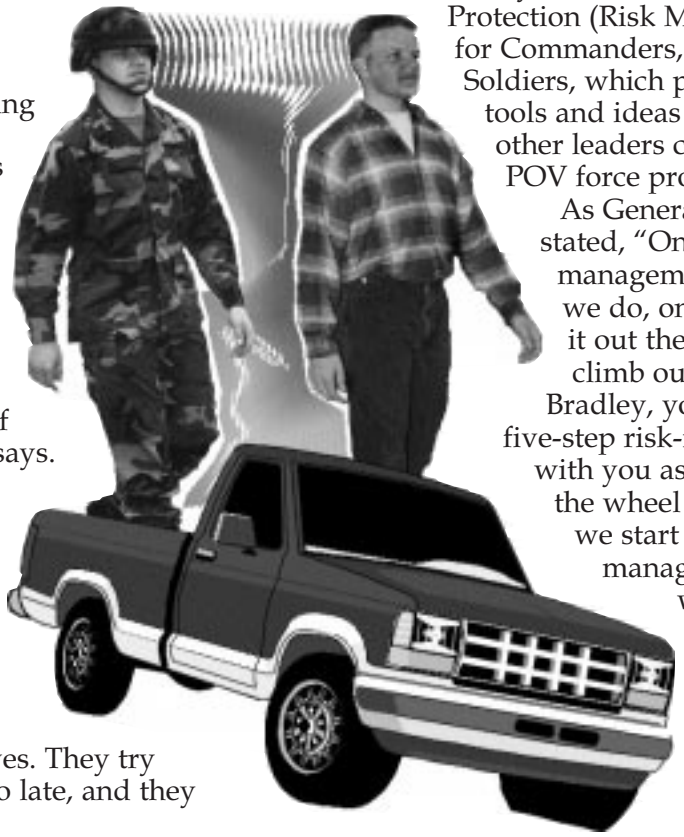
Fatigue is a factor because soldiers overextend themselves. They try to go too far or come back too late, and they fall asleep at the wheel.

Seatbelts

Nonuse of seatbelts is up 7 percent in FY 96. We don't really know why. We do know that if you are wearing your seatbelt during an accident, your chance of receiving fatal injuries is reduced by 45 percent.

Safety Center analysis also shows that many POV accidents are directly related to soldiers' inability to recognize hazards, underestimation of their personal risk, and overestimation of their personal ability. This tells us that we need to help soldiers assess themselves as drivers and offer them some controls they can use to lower the risks. We've done that. The October issue of *Countermeasure* describes the Automated Risk Assessment and Controls (ARAC) Program that will let soldiers sit down at a computer and input data about their driving history and habits. The program will tell them the risks and offer control options they can select to lower their risk of having a POV accident.

POV ARAC has been field-tested with selected units and Armywide distribution began in November. Accompanying the program is the Privately Owned Vehicle Force Protection (Risk Management) Toolbox for Commanders, Leaders/NCOs, and Soldiers, which provides a variety of tools and ideas commanders and other leaders can use for their unit POV force protection programs.



As General Konitzer has stated, "Once we embed risk management into everything we do, one can't help but take it out the gate." When you climb out of a 5-ton or a Bradley, you've got to take the five-step risk-management process with you as you slide behind the wheel of your POV. When we start thinking risk management off duty as well as on duty, we're going to decrease POV accidents just like we have in our tactical operations. ♦

Safe use of lithium batteries

Primary lithium batteries (non-rechargeable)

The Army's lithium battery is a lightweight, high-energy, portable power source with several built-in safety features. It can operate your equipment safely and effectively over a wide range of temperatures.

Lithium batteries have shown that they can stand up to normal handling, storage, and use conditions. *However, they must be handled with care to prevent hazardous conditions.* You are an important part of an intelligent safety program that minimizes the risks associated with the use of these batteries.

Transportation

■ All lithium batteries are classified as Class 9 hazardous materials. Coordinate all shipments with your installation transportation office.

■ Lithium batteries may be shipped in bulk by surface transportation or cargo aircraft.

■ Lithium batteries may be carried in equipment or as spares IAW chapter 3, TM 38-250: *Air Transport Regulations* for tactical, contingency, and emergency conditions.

Handling/use

■ Use only those batteries authorized for a specific item.

■ Use batteries from stock on a first-in, first-out basis. Do not use batteries beyond the expiration date.

■ Before using, examine all batteries for any signs of obvious defects or damage or if any liquid is visible within the plastic bag.

■ Remove all batteries from equipment as soon as they fail to operate the equipment or when their cumulative use reaches the recommended useful life of the battery for the particular item.

■ Shut off equipment if the battery compartment becomes hot and wait for the compartment to cool before removing the batteries.

■ Leave the immediate area if you detect an irritating odor coming from the equipment or battery or if a hissing sound is heard.

■ Report any battery venting to your local safety office within 24 hours and contact your local CECOM logistics assistance representative (LAR) as soon as possible. Save the vented battery and equipment for analysis.

■ The unit will file a product quality deficiency report (PQDR) with the LRC Power Sources Group and the CECOM Safety Office and provide disposition instructions for the damaged battery and equipment. The LAR can be of assistance in this instance.

Storage

■ Store new batteries in original packaging until ready for use.

■ Store in cool, dry, well-ventilated areas separated from other combustible and hazardous materials.

■ Keep an approved Class D fire extinguisher available for all areas where lithium batteries are stored.

■ Coordinate fire-protection measures for all battery-storage areas with the installation fire department.

Disposal

■ All battery disposal must be coordinated with the installation environmental office to ensure compliance with local environmental regulations.

■ Lithium sulfur dioxide batteries are classified as non-hazardous waste in Resource Conservation and Recovery Act (RCRA) and bioassay states when fully discharged. Lithium manganese dioxide batteries are classified as non-hazardous waste in RCRA states but are classified as hazardous waste in bioassay states when fully discharged.

■ All multicell lithium batteries have a complete discharge device (CDD) to ensure complete discharge for disposal.

■ Only personnel designated by the unit are to activate the CDD.

■ The CDD is to be activated in a secure, well-ventilated area away from personnel occupancy and separated from other hazardous materials.

■ Once the CDD is activated, store the batteries so that they are separated on all sides by at least 2 inches. Store the batteries for a minimum of 5 days after activating the CDD before packaging for disposal.

Reference

TB 43-0134: *Battery Disposition and Disposal*, 1 Oct 95. ♦

—POCs CECOM Safety Office: Mr. Philip Klimek, DSN 992-9723 ext. 6437 (908-532-9723 ext. 6437),

e-mail klimek@doim6.monmouth.army.mil and Mr. David Kiernan, DSN 987-3112 ext. 6447 (908-427-3112 ext. 6447), e-mail kiernan@doim6.monmouth.army.mil. POC Power Sources Group: Mr. Patrick Lyman, DSN 992-8824 (908-532-8824), e-mail lyman@doim6.monmouth.army.mil.

Lithium sulfur dioxide battery venting incidents

Recently, the number of ventings in lithium sulfur dioxide batteries has increased. This is particularly true of the BA-5800/U and the BA 5590/U batteries. As a result, two ground precautionary messages (GPMs) have been issued by the Communications-Electronics Command (CECOM) Safety Office. These messages consolidate and supersede all previously issued battery GPMs.

GPM 96-012, BA-5800/U (NSN 6665-99-760-9742), lithium sulfur dioxide batteries. The principal issues covered in this message are:

■ All BA-5800/U batteries manufactured by Crompton Eternacell Ltd. are deadlined. These batteries must be turned in for exchange. They may **not** be used in any equipment.

■ BA-5800/U batteries manufactured by Ballard Battery Systems only under contract DAAB07-90-C-C024 may **not** be used in the AN/PSN-10 small lightweight global positioning system receiver (SLGR) or the stand-alone aviation global positioning system receiver (SAGR). All other BA-5800/U batteries may be used. *Note:* The contract number can be found on the printed label on the side of the battery.

■ When using an external power source with the precision lightweight global positioning system receiver (PLGR), remove the BA-5800/U batteries before connecting the external power source.

■ CAM batteries (NSN 6135-21-906-7728) are **not** BA-5800/U batteries (although equivalent in size). They may be used only in the chemical agent monitor (CAM).

■ BA-5800/U batteries manufactured by Power Conversion Inc (PCI) (contract DAAB07-94-C-E002) and SAFT (contract DAAB07-94-C-E004) should be checked for residual voltage 5 days after activating the complete discharge device (CDD) before disposing of the batteries.

GPM 96-013, BA-5590/U lithium sulfur dioxide non-rechargeable batteries (NSN 6135-01-036-3495). The principal issues covered in this message are:

■ BA-5590/U batteries manufactured by SAFT (contract DAAB07-90-C-C020) are not to be used in SAWE MILES II equipment.

■ BA-5590/U batteries manufactured by SAFT (contract DAAB07-90-C-C020) should only be used in other items for a cumulative use time of the hours listed in appendix A of this message.

■ BA-5590/U batteries manufactured by SAFT (contract DAAB07-90-C-C020) and stored in depot are being preconditioned to minimize the risk of venting. These batteries have a nonextendable shelf life of 12 months after preconditioning (expiration date on battery label) and have the same restrictions as previously listed. These batteries have a new NSN 6135-01-435-3097 and may be obtained at a reduced cost.

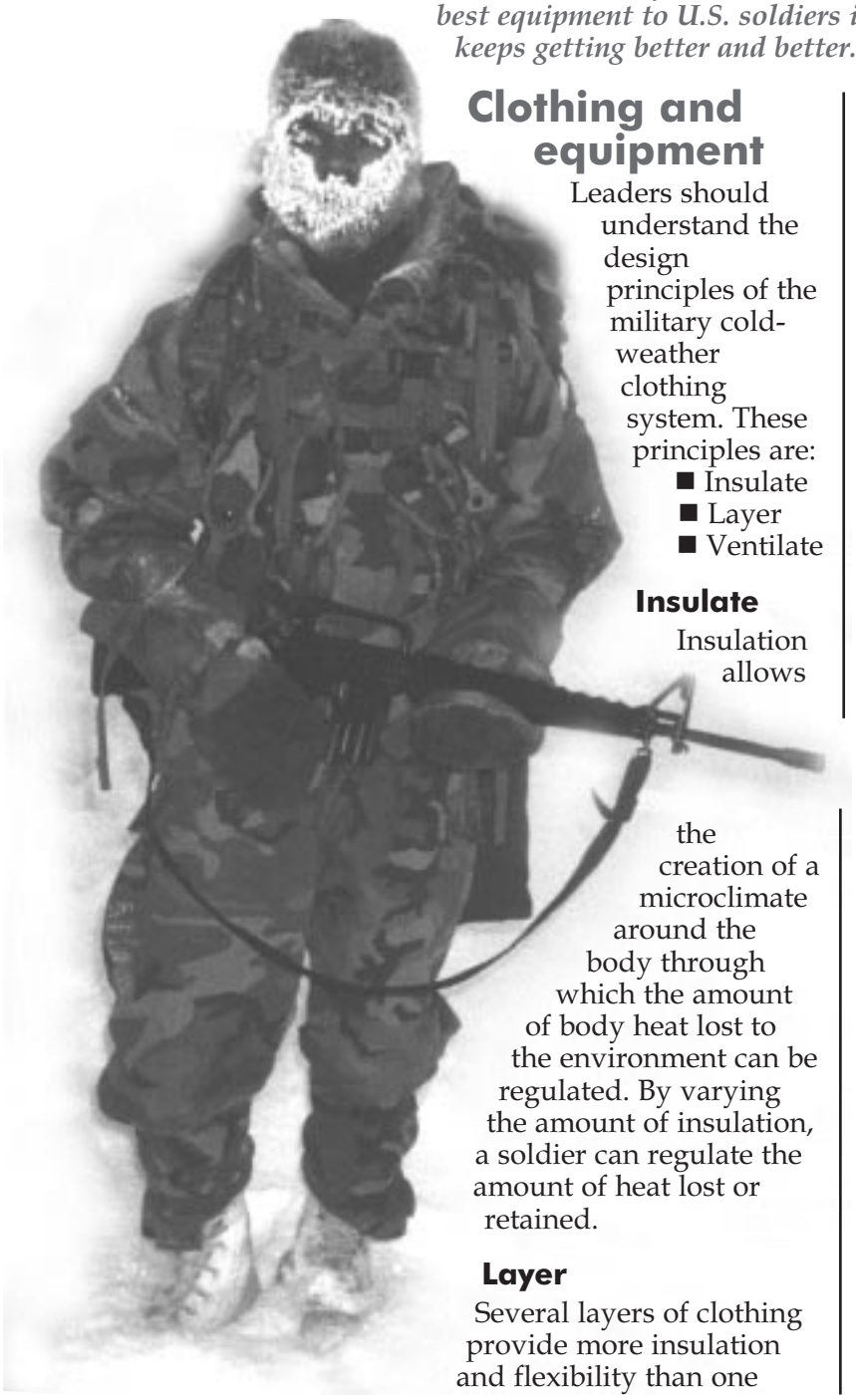
■ BA-5590/U batteries manufactured by PCI may be used without restrictions. Those batteries manufactured by PCI under contract DAAB07-95-C-G322 should be checked for residual voltage 5 days after activating the CDD.

Complete texts of these messages may be obtained directly from the CECOM logistics assistance representative (LAR), the CECOM Safety Office, or the Power Sources Group. ♦

—POCs CECOM Safety Office: Mr. Philip Klimek, DSN 992-9723 ext. 6437 (908-532-9723 ext. 6437), e-mail klimek@doim6.monmouth.army .mil and Mr. David Kiernan, DSN 987-3112 ext. 6447 (908-427-3112 ext. 6447), e-mail kiernan@doim6.monmouth.army.mil. POC Power Sources Group: Mr. Patrick Lyman, DSN 992-8824 (908-532-8824), e-mail lyman@doim6.monmouth.army.mil.

Cold weather revisited

The October issue of Countermeasure contained information about protecting the force from cold-weather injuries. In this issue, we've included a reminder about the importance of protecting soldiers with the right cold-weather clothing and equipment. We've also included a caution about possible static discharge from the extended cold-weather clothing system parka and trousers during certain cold-weather operations. And there's a good-news story about a new family of space heaters developed at Natick Research, Development and Engineering Center that should make life more bearable for soldiers in the field. Furnishing the best equipment to U.S. soldiers is good risk management—and it just keeps getting better and better.



Clothing and equipment

Leaders should understand the design principles of the military cold-weather clothing system. These principles are:

- Insulate
- Layer
- Ventilate

Insulate

Insulation allows the creation of a microclimate around the body through which the amount of body heat lost to the environment can be regulated. By varying the amount of insulation, a soldier can regulate the amount of heat lost or retained.

Layer

Several layers of clothing provide more insulation and flexibility than one heavy garment, even if the heavy garment is as thick as the combined layers. By adding or removing layers of clothing, soldiers can regulate the amount of heat lost or retained.

Ventilate

Ventilation helps maintain a comfortable microclimate around the body, thereby helping control body temperature. By ventilating, the soldier can release excess heat and minimize sweating which can lower body temperature later as it evaporates.

Making the principles work

There are four ways to apply the principles in the military cold weather clothing system.

- Keep it — **C**lean
- Avoid — **O**verheating
- Wear it — **L**oose in layers
- Keep it — **D**ry

- *Keep clothing clean.* Dirt and grease clog the air spaces in clothing and reduce the insulating effort. Dirty clothes are cold clothes.
- *Avoid overheating.* Select the clothing needed to stay comfortable, or even a little cool. Leaders should ensure that their soldiers are not overdressed for the job they are performing.
- *Wear it loose.* All items of the cold-weather uniform are sized to allow wearing of the appropriate number of layers; this means, for example, that the field jacket may appear too large when worn without all of the layers designed to fit under it. If the uniform items do not fit loosely, the insulation will be substantially reduced.

● *Keep it dry.* It is vital that all layers of clothing be kept dry because wet clothing conducts heat away from the body, compromising the microclimate around the body and making it difficult to regulate body temperature. Moisture soaks into clothing from two directions; from melting snow and frost that has collected on the outside of the clothing and from perspiration. Leaders should ensure that soldiers brush snow and frost from clothing before entering heated shelters or vehicles. ♦

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). ♦

New space heaters available

Over the past 50 years, the military has utilized World War II vintage M-41 and Yukon heaters. These space heaters have plenty of solid attributes, such as a simple design and a low cost. But current standards of safety and efficiency are much more stringent. There's also a need

Mike Kingston (CRTC) Ft. Greely AK

to keep pace with recent technological advances that have led to the development of new shelter systems (various sizes) and equipment. One example is a tent called the Modular Command Post System, which has special heating needs because it houses expensive sensitive computer equipment.

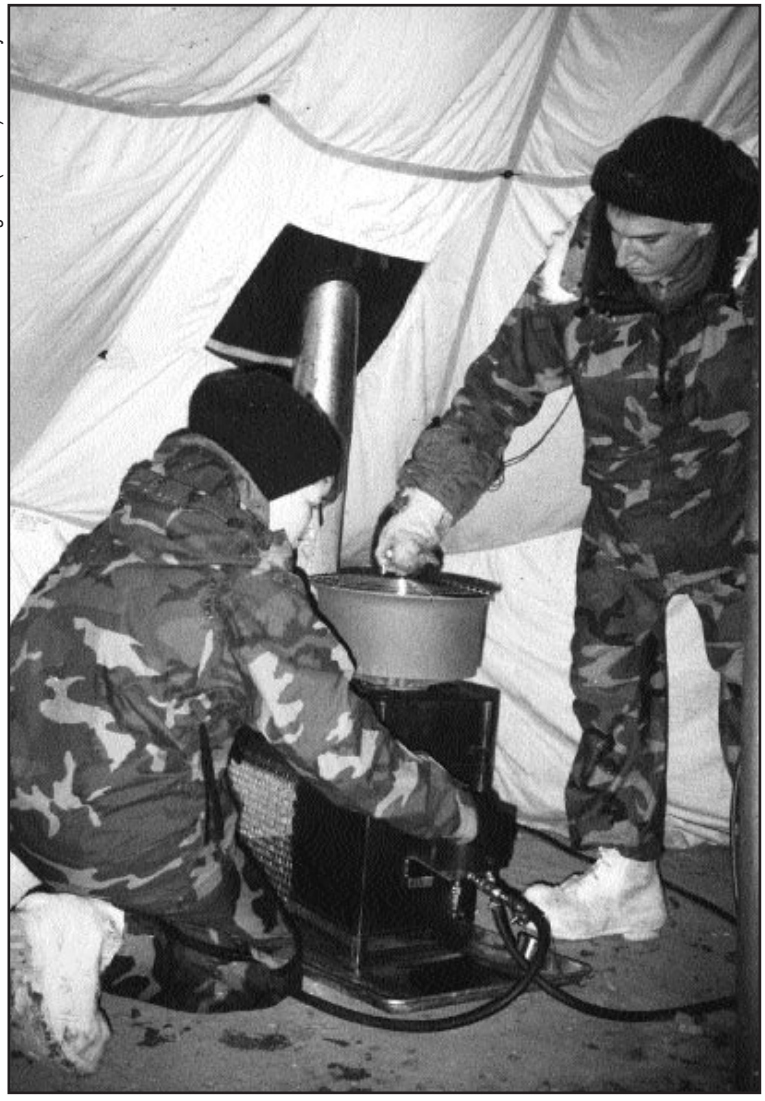
Now a new family of space heaters (FOSH) is being developed by researchers at the U.S. Army Natick Research, Development and Engineering (RD&E) Center, located in Natick, MA. These heaters are designed to meet the many new demands on cold-weather heating units, including—

■ Operation without the use of external electrical power.

■ Cold-weather operation, at arctic temperatures as low as -60°F.

■ Ability to run on all types of liquid and solid fuels.

Mike Kingston (CRTC) Ft. Greely AK



Description

Three nonpowered heaters form the nucleus of the new family of tent heaters. Because the spectrum of anticipated climatic conditions is broad and varying tent volumes, each unit has a different heating capability. For the sake of standardizing the operating procedure all of the nonpowered heaters share certain features, including—

■ **Vaporizing burner.** This new technology turns combustion into a two-step process. First fuel is vaporized in a unique r-shaped tube, then combustion takes place when air is mixed with the vaporizing fuel. This design helps to simplify operation and also improves safety by providing a means of control over the flow of fuel.

■ **Multi-fuel control valve.** This newly developed component keeps the flow rate constant for the many different viscosities of liquid fuel found in the field.

■ **Thermoelectric fan.** To improve the distribution of heat, this compact fan can be set on top of any of the three heaters. It's powered by a built-in thermoelectric module that develops electricity from the high temperatures at the heater's top surface.

The Natick researchers have also introduced a fourth member of the heater family. This is a special convective space heater that is completely self-powered, generating its own electrical power through thermoelectric modules that are located in the combustion chamber. This is the first successful integration of thermoelectrics into a field heater. The heater can be used either inside or outside of the tent and its operation is completely automatic. Another bonus: the combustion is cleaner and more efficient, so fuel consumption is lowered.

The U.S. Army Natick RD&E Center is employing state-of-the-art technology with their new nonpowered heaters and self-powered convective heater. This family of space heaters provides safer and more responsive heating. For the soldiers in the field, that translates into a more comfortable environment that can boost the quality of life and morale. ♦

—POC: Mr. Joe MacKoul, Natick RD&E Center, DSN 256-4104 (508-233-4104)

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We need your help

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Safety Guardian Award

Saving lives getting to be a habit for this NCO

SFC Curtis A. Page, U.S. Army Recruiting Battalion, Pittsburgh, PA. People were enjoying themselves during a riverboat cruise for hospitalized veterans. Then SFC Curtis Page, Armed Forces coordinator for the event, saw that a patient seated at a nearby table appeared to be choking. Others were trying to dislodge whatever was causing him to choke. Page ran over to help and saw that the patient had turned white and his eyes had rolled back. He applied the Heimlich maneuver with greater force and was able to dislodge the object from the patient's throat.

Although untrained as a medic, Page was forced into medical service many times in Vietnam when wounded soldiers needed help. In 1989, a 5-year-old started choking on a piece of candy in Page's recruiting office. The child's father tried to help, but Page saw that the child was turning blue. Using the Heimlich and "some prayers," Page was able to save the youngster.

The previous year, Page had come upon an accident scene on his way home from work. A vehicle had hit a utility pole, and the driver was bleeding profusely from a cut on his head. Power lines were dangling over the car, the street was wet, and bystanders were reluctant to approach the vehicle. Placing his leather coat over his hand, Page carefully removed the victim from the car and applied direct pressure to the victim's wound until help arrived.

Because of his action in an emergency situation, which saved the life of a fellow human being, SFC Curtis A. Page has been awarded the Army Safety Guardian Award. ♦

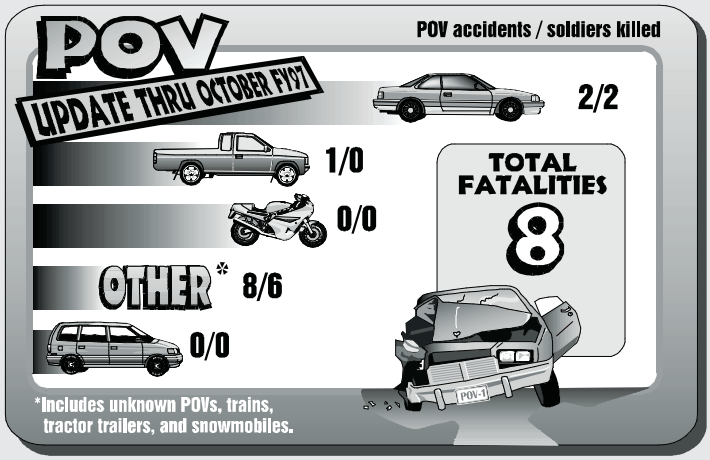
—adapted from an article by Bill Hines in *The Centurion*, U.S. Army Recruiting Battalion, Pittsburgh

More about the Safety Guardian Award

The Army's Safety Guardian Award recognizes Army personnel for extraordinary actions in emergencies. To be eligible for the award, a soldier or Department of the Army civilian must have accomplished one of the following:

- Prevented injury to personnel
- Prevented an imminent-danger situation
- Minimized or prevented damage to Army property

Further guidelines are in AR 672-74: *Army Accident Prevention Awards Program.* ♦



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