



ARMY GROUND RISK MANAGEMENT INFORMATION

Countermeasure

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FATIGUE...



A Soldier's ENEMY

Countermeasure

CONTENTS



4



14



8

- 3** **DASAF's Corner**
The Number One Killer of Soldiers
- 4** **Fatigue...A Soldier's Enemy**
- 6** **GSA Vehicles Are Top Accident Producers**
- 7** **Ground Guiding Army Vehicles**
- 8** **Stop, Look, Listen, and LIVE!**
- 10** **Kevlar Helmet Tested Safe To Wear**
- 12** **POV**
Check Your Six
- 13** **Reserve Component Safety**
Drill Weekend Safety
- 14** **NCO Corner**
Enforcing Standards Saves Lives
- 16** **An Electrifying Experience**
- 18** **Plan Ahead For Summer Hazards**
- 19** **Maintenance Advisory**
on Army Space Heater
- 20** **POV Toolbox**



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DASAF's CORNER

From the Director of Army Safety

The Number One Killer of Soldiers...

...isn't the bad guys we're fighting in our proclaimed war on terrorism. We are losing soldiers to an enemy we face every day, right here at home. Privately owned vehicle (POV) accidents have taken the lives of 36 soldiers during the first four months of this fiscal year—a far greater number than have been killed in combat during Operation Enduring Freedom.

Although, compared to FY00, we closed out FY01 with an 11 percent decrease in POV fatalities, we still lost 99 soldiers in POV accidents. Each year, from FY92 through FY01, POV accidents have accounted for approximately 60 to 65 percent of the total Army accident fatalities. We can, we must, do better!

The Army's senior leadership is adamant that the Army redouble its efforts in attacking POV accidents. The Sergeant Major of the Army is working with the NCO Corps to help commanders significantly reduce these losses. A 20-percent reduction from last year is an achievable goal. However, we must always be mindful that selection of a number is simply one metric for measuring safety performance; *never* lose sight of the fact that numbers represent lives lost. The loss of even one soldier is one too many. Losing soldiers in preventable POV accidents is totally unacceptable.

Most of the POV accidents this fiscal year have been caused by the usual traffic hazards: speed, fatigue, and failure to wear seatbelts/helmets. Analysis continues to reveal that soldiers constantly underestimate their personal risk and overestimate their personal ability, causing errors relating to speed and fatigue.

FY01 data reveals that Army POV fatalities were 37 percent lower than the nation's demographically similar population. Male drivers under the age of 25 are the most likely age group to become involved in fatal accidents. A significant difference between the Army and the general public is that we, as Army leaders, can exert more control over soldier behavior. We have plenty of opportunities and authority to strongly influence the behavior and risk decisions of our young, most-at-risk soldiers. If we aren't doing that, then we should be.

POV accident prevention involves continual senior leader and NCO involvement. Division commanders must be briefed by the chain of command—from squad leader to battalion commander—on each POV fatality and ensure that the information is shared with other local commanders. Leadership at all levels must take an active role in promoting safety awareness and risk management as the primary factors in preventing POV accidents and fatalities.

NCOs should know where every soldier is going while on leave, what he or she will be doing, and when every soldier will be returning to the unit. Make traffic safety a discussion topic at meetings. Jumpstart the dialogue with one of the five new videos from the "*Drive to Arrive*" POV Accident Prevention Campaign. These videos are now available to download at our website, <http://safety.army.mil>, and will be available in VHS format at <http://afishp6.afis.osd.mil/dodimagery/davis/>.

POV accident prevention also requires that we—general and private alike—exhibit the individual self-discipline to obey traffic laws and all post-specific guidance regarding POV operation every day, every time we slide behind the wheel. Let's make "*Drive to Arrive*" more than a slogan. Let's put it into practice and help enhance combat readiness by neutralizing the threat that has been the number one killer of soldiers for far too long. ✪

Train Hard—Be Safe!

BG James E. Simmons

A soldier drowned when the M985 Heavy Expanded Mobility Tactical Truck (HEMTT) he was driving rolled over into a streambed. The truck was part of a 73-vehicle convoy conducting a night tactical road march. As part of the support element, his platoon was deployed to support a cavalry squadron movement to the unit maintenance collection point (UMCP) as the squadron began a 14-day training exercise.

The night was characterized by light precipitation, with 6 percent moon illumination and 2-mile visibility. The unit was using night vision goggles (NVGs).

This was a movement that should have proceeded without incident or injury. However, the following significant events contributed to the accident: continuous operations throughout the day without rest, insufficient leader supervision, lack of risk management implementation, and no continuous risk assessment.

What happened?

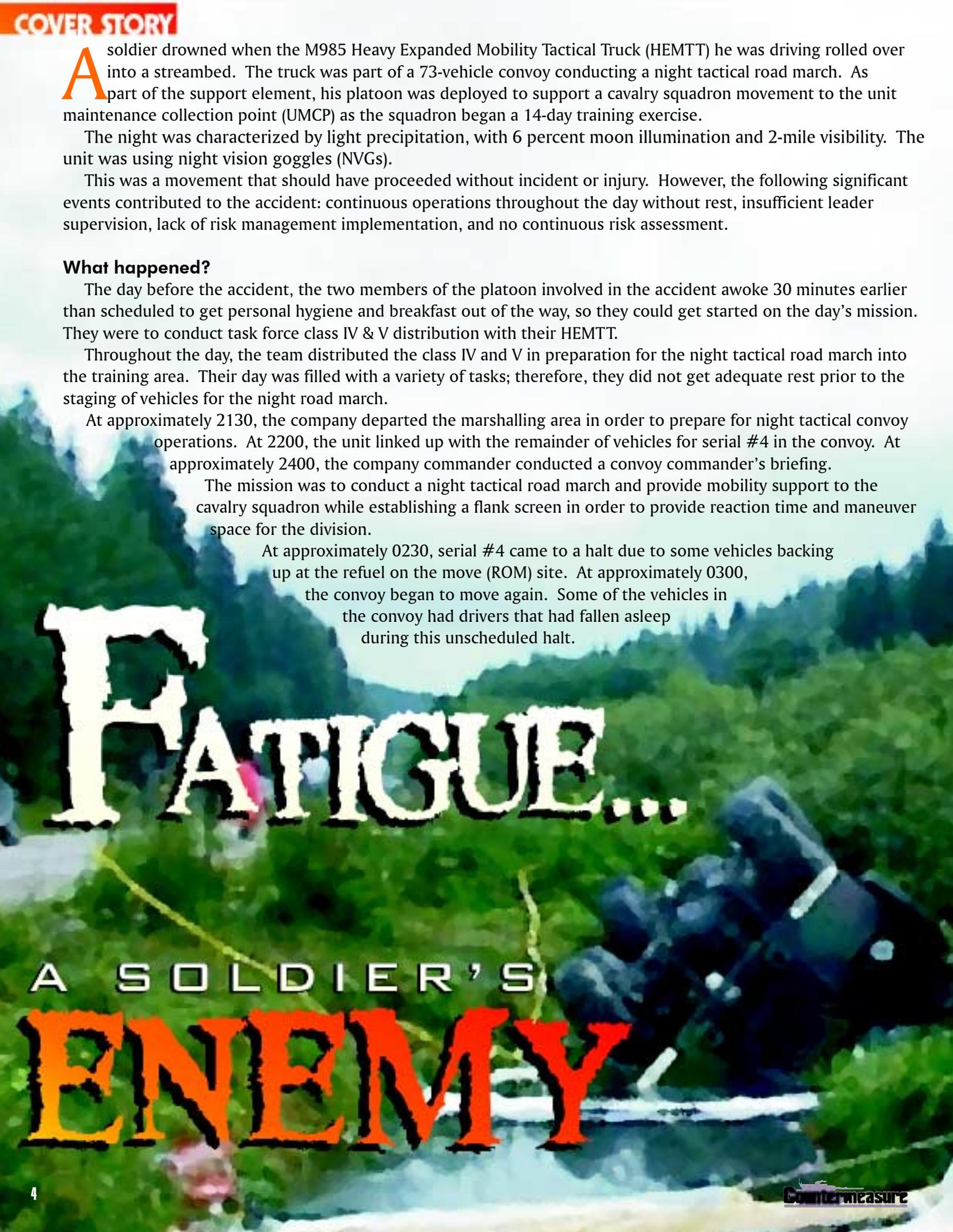
The day before the accident, the two members of the platoon involved in the accident awoke 30 minutes earlier than scheduled to get personal hygiene and breakfast out of the way, so they could get started on the day's mission. They were to conduct task force class IV & V distribution with their HEMTT.

Throughout the day, the team distributed the class IV and V in preparation for the night tactical road march into the training area. Their day was filled with a variety of tasks; therefore, they did not get adequate rest prior to the staging of vehicles for the night road march.

At approximately 2130, the company departed the marshalling area in order to prepare for night tactical convoy operations. At 2200, the unit linked up with the remainder of vehicles for serial #4 in the convoy. At approximately 2400, the company commander conducted a convoy commander's briefing.

The mission was to conduct a night tactical road march and provide mobility support to the cavalry squadron while establishing a flank screen in order to provide reaction time and maneuver space for the division.

At approximately 0230, serial #4 came to a halt due to some vehicles backing up at the refuel on the move (ROM) site. At approximately 0300, the convoy began to move again. Some of the vehicles in the convoy had drivers that had fallen asleep during this unscheduled halt.



FATIGUE...

A SOLDIER'S

ENEMY

This caused distance gaps between the vehicles in the convoy. Shortly after serial #4 started rolling again, the fifth vehicle in serial #4 unexpectedly traveled to the left side of the tank trail, down an unimproved shoulder, and came to rest in a 160-degree inverted position in a 4-foot deep stream of free-flowing water. The vehicle sustained minimal damage; however, the driver received fatal injuries when he was knocked unconscious and subsequently drowned. The senior occupant of the vehicle received minor injuries.

Why did it happen?

The company commander delegated risk management down through the squad leaders to ensure soldiers got enough rest prior to missions. However, they did not continually reassess the risks throughout the day due to continuous operations. As a result of conducting the day's class IV and V distribution, the soldiers did not conform to the established guidance on rest. The compounding effects of no sleep throughout the duty day, coupled with the added challenge of night driving under NVG conditions, were the formula for this tragedy.

Countermeasures

- Leaders must enforce use of safety equipment.
- Leaders must enforce rest plans.
- Reduce size of convoy to a manageable size. 

POC: Ground Systems and Accident Investigation Division,
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MISSION:
Conduct night
tactical road march

HAZARDS

- Driver fatigue
- Continuous operations
- Night convoy
- Improper use of seatbelt restraint system

RESULTS

- 1 fatality

CONTROLS

- Implement and supervise rest plan
- Reduce size of serial
- Enforce use of safety equipment

GSA Vehicles Are Top Accident Producers

In the past 4 years, General Service Administration (GSA) vehicles have had the highest accident rate of all vehicles driven in the Army. Since 1998, accidents involving GSA vehicles have resulted in 7 fatalities, 1,075 accidents, and damage and injury costs of \$7,643,151. These statistics have a direct impact on the readiness and effectiveness of our Army. Identified below are some things leaders and soldiers can do to make our Army safer.

Top accident causes

- Driving too fast for weather/road conditions.
- Following too closely.
- Animals running out in front of the vehicle.
- Improper backing; not checking to the rear of vehicle.
- Misjudging clearance.

Risk management for leaders

- Ensure the drivers receive proper training.
- Use safety briefings to emphasize driving attentiveness, controlling speed, braking ability and following distances.
- Control hazards through advance planning; continually reassess risks throughout the mission.

Risk management for individuals

- Wear seatbelts.
- Read the operator's manual; know the vehicle's capabilities.
- Know the mission and the route.
- Pay attention to the road conditions.
- Give full attention to driving the vehicle.
- Don't use cell phones while operating a vehicle.
- Don't exceed the speed limit.
- Don't risk life or injury when fatigued.

Vehicle operators are responsible for executing risk controls to standard. They must continuously assess variable hazards such as fatigue, equipment, serviceability, and the environment. Vehicle operators must also obey all laws, drive defensively, use good driving skills, follow all safety procedures, and be familiar with their vehicle, understanding its capabilities and limitations.

A critical task for all operations is minimizing risk. A thorough risk assessment should be conducted before operation of any vehicle—even GSAs. Every military plan must make risk mitigation a priority...it is an inherent part of every mission, and a basic responsibility of leadership.

Fortunately, GSA accidents are on the decline this fiscal year. With continued attention to quality driver training, professionalism, and seatbelt use, we can make a significant difference in the upcoming year. *Be Safe and Drive to Arrive!* 🚗

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Risk Management



A rmy vehicles are awkward, noisy, oversized equipment that can be very dangerous to move around. In some vehicles, drivers cannot see to their far left or right, much less to the rear of the vehicle.

Ground guides will be used IAW AR 385-55, *Prevention of Motor Vehicle Accidents*. We don't know how many accidents have been prevented by the use of ground guides because accidents that don't happen don't get reported. However, a review of accidents in which ground guides should have been used but weren't, or were used incorrectly, makes it clear that—

- Ground guides are essential.
- To be of value, ground guides must know what they're doing. Their own lives, as well as the lives of others, depend on their knowing *when* to ground guide, as well as *how* to ground guide.

AR 385-55, Para 2-18, states that wheeled vehicles will normally require one ground guide; however, two or more ground guides (one in front and one in the rear) will be used when backing a wheeled vehicle when vision is restricted.

Drivers should take all directions and signals from the front ground guide. If at any time the driver cannot see the front ground guide, or the front guide cannot see the rear guide, the vehicle should be stopped at once. Both guides should always remain a safe distance from the vehicle (keep at least 10 yards between themselves and their vehicles) and never walk or stand directly in front of or behind the vehicle being moved. A few years ago, an accident was reported where a soldier was walking backward while ground guiding a vehicle. When he stumbled and fell, the vehicle ran over him before the driver could stop.

Prevention is the key. One way to prevent problems is to train all ground guides in the proper methods and signals to use when ground guiding vehicles, and to ensure that no soldier is used to ground guide a vehicle until he has received the proper training. Only through command emphasis and NCO supervision can these accidents be prevented. 

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GROUNDED GUIDING ARMY VEHICLES



Stop, Look, Listen, and LIVE!

In the past 2 years, three soldiers were killed at railroad crossings. Additionally, 2 civilians were killed and 21 injured in train accidents as a result of Army operations, costing the Army almost \$7 million.

- Two soldiers were killed when their M977 Heavy Expanded Mobility Tactical Truck (HEMTT) was struck by a train while crossing an unguarded off-post railroad crossing during a daylight road movement of three vehicles.
- The second fatal accident occurred during daylight hours when a M1075 Palletized Load System (PLS) stalled between a guarded railroad crossing. The train was unable to stop in time to avoid hitting the vehicle. The assistant driver escaped with minor injuries; however, the driver was not so fortunate. He was killed upon impact. In addition, 2 civilians on the train were killed and 21 others were injured.

These accidents may have been avoided by knowing some important facts:

A typical freight train traveling at a speed of just 30 mph needs 3,500 feet to stop. That's well over a half mile, and is 41 times the distance required to stop an automobile traveling at the same speed.

Motor vehicle drivers must obey traffic rules and warning signs. Remember that a train always has the right-of-way. In most cases, the train engineer is virtually helpless. The best he can do is blow the whistle and lay on the brakes, but usually he can't stop in time.

Trucks carrying hazardous materials must stop at ALL grade crossings. Drivers should come to a gradual stop to minimize the possibility of causing

another driver to have an accident. Wherever possible, they should reroute away from grade crossings or use grade crossings equipped with flashing lights and gates. And never change gears while crossing the tracks.

In Europe, Class 2 vehicles and vehicles with trailers are required by law to stop immediately after passing the single stripe sign post when the railroad crossing is closed or a train is approaching. This requirement enables faster moving vehicles to pass slower vehicles before reaching the crossing.

FM 21-305, *Manual for the Wheeled Vehicle Driver*, can help with your Driver's Training Program.

To move safely through a railroad crossing, develop the following habits:

- Identify all warning signs, signals, and protective devices.
- Before crossing the tracks, look both ways and listen for approaching trains.
- After a train has passed, be sure no other train is approaching from either direction before starting across.
- Never stop on railroad tracks. In traffic, make sure there is room to clear the tracks before starting to cross.
- Do not rely on mechanical equipment (flashing lights) to be sure the way is safe to cross.
- Never take familiar crossings for granted or assume that no train is coming.
- Be particularly alert for trains after dark where gates or flashing lights do not protect crossings. Frequently, drivers drive into the sides of trains at such crossings.
- Stop your vehicle between 15 and 50 feet from a railroad crossing when transporting hazardous materials or passengers (in a vehicle designed to transport 16 or more persons including the driver).
- When driving a bus, open your forward door, it will help you see or hear an approaching train.

Remember, do your part—**STOP, LOOK, LISTEN & LIVE!**

For more information on teaching railroad safety, check out the Federal Railroad Administration (FRA) safety website at www.fra.dot.gov/s/edu/index.htm and Operation Lifesaver website at <http://www.oli.org/>.

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Always Expect a Train!



Mission:

Deploy to training area

Hazards

- Unguarded railroad crossings
- Train horns cannot be heard from inside HEMTT cabs

Results

- 2 fatalities

Controls

- Stop, look, and listen at all railroad crossings
- Vehicle commanders make sure drivers pay attention
- March unit OIC positioned to positively control march element

Mission:

Deliver storage units to Ammo Supply Point

Hazards

- High speed train system
- Driver unfamiliar with route

Results

- 3 fatalities: 1 mil, 2 civ
- 21 injuries: 1 mil, 20 civ
- Cost: \$5-7M

Controls

- Stop, look, and listen at all railroad crossings
- Qualified & licensed assistant drivers
- Risk management - route orientation & maps



Kevlar Helmet Tested Safe to Wear

In 1999, motor vehicle-related trauma in the U.S. resulted in more than 42,000 deaths and over 3 million injured motorists. Head injuries are a leading cause of fatal and severe injuries in soldiers operating or riding in Army motor vehicles (AMVs). A recent study of hospital discharge records from military facilities notes that motor vehicle crashes are the second-most common cause of head injury in the military population (second only to falls).

Concerns have resurfaced recently about wearing the Kevlar helmet while operating or riding in AMVs in a non-tactical setting. One of the main concerns has been that some people think it isn't safe because

they feel that the weight of the helmet will cause neck injuries, and that it won't protect against head injuries because it wasn't designed for it.

To answer these concerns, the Army Safety Center and the U.S. Army Aeromedical Research Laboratory (USAARL) decided to look into the issue by reviewing all Class A-C AMV accidents for the last 10 years. What was found might surprise you.

Kevlar helmets are heavy...

Not really! When a number of aviation helmets, commercial motorcycle-type helmets, and the Kevlar were all weighed, the average weight was 3.003 pounds. The Kevlar weighs 3.2 pounds—not much different.



Kevlar helmets aren't crash helmets and won't protect your head...

In 1995, USAARL was asked by the Safety Center to do some tests to see if the Kevlar would protect against blunt head injury. In these experiments, it was shown that using the Kevlar helmet could lead to a 29 percent decrease in head injuries in typical ground vehicle accidents.

Yeah, but that is just experimental...

True, but when real accidents were analyzed, data proved that use of the Kevlar helmet was associated with a decrease in vehicle passenger head injuries. Statistical tests showed that the association—basically that the Kevlar helmets were protective—wasn't just a fluke. The bottom line is that real life showed the 1995 experiment was accurate.

Okay, but the extra weight will cause neck injury...

This is where it gets more interesting. In the 1995 USAARL experiments, it was estimated that there would be a 10 percent increase in neck injuries.

We told you so...

However, when the 1991-2001 accidents were analyzed, researchers found no statistically significant association between Kevlar helmet usage and sustained neck injury in U.S. Army motor vehicle accidents. Again, this was confirmed by statistical tests. The bottom line is that real life showed the 1995 experiments to overestimate the risk of neck injury.

Okay, so they don't seem to be associated with neck injuries in an accident, but what about all the neck strains from not being used to the extra weight?

If you wanted to get a better score for push-ups on a PT test, you would practice by doing more push-ups. The extra push-ups might hurt till you got stronger and used to them, but for

most people, wearing the Kevlar helmet is no different—you'll get used to it if you wear it.

So what you are saying is...

The evidence from real-world analysis shows that Kevlar helmets appear to protect against head injury, and are not necessarily associated with neck injuries in motor vehicle accidents.

Wearing a Kevlar helmet in an AMV in a non-tactical situation really is like preparing for anything else; we always say "train as you fight." You would have to wear the helmet if you were in Bosnia, Kosovo, or Afghanistan. Would you rather get used to it on a convoy in a training environment, or while deployed? OJT isn't always the best thing.

Editor's Note: This article is about four wheeled tactical vehicles, not motorcycles or non-tactical vehicles like sedans or vans. The Personnel Armored System, Ground Tactical (PASGT), or 'Kevlar helmet,' is not intended to be a substitute for the mandatory DOT-approved motorcycle helmet.

The DOT-approved motorcycle helmet is still required when Army personnel ride a motorcycle, whether it is an Army motorcycle or personal motorcycle...both on and off post. Additionally, civilian personnel riding motorcycles on Army installations are required to wear a DOT/Snell Foundation-approved motorcycle helmet at all times, regardless of local or state laws. Incidentally, USAARL continues its testing of the Modular Integrated Communications Helmet (MICH) helmet which could potentially take the place of a standard motorcycle helmet for selected military motorcycle operations. 🏍️

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Check Your Six

The U.S. Army Air Corp pilots first coined the phrase “check your six” during World War II. Enemy aircraft were visually located relative to the nose of Army aircraft. Thus, an aircraft located off the nose of a plane would be called out as being at the 12 o’clock position. Enemy aircraft positioned to the left would be at the 9 o’clock and to the right would be at 3 o’clock.

The most dangerous position for enemy aircraft to be located would be in the 6 o’clock position or at the rear. From this position, enemy aircraft are the most difficult for pilots to see, and when observed they are the most difficult to bring down as most aircraft have few or no weapons that can direct fire to the rear. Therefore, it was incumbent that pilots watch for enemy aircraft approaching from the rear in order to warn their fellow pilots to “check your six.”

What does this information have to do with driving a car or other vehicle? My own recent experience brings three examples to mind. In the past six months while driving, there were occasions where “checking my six” with my rearview mirror helped me to spot trouble about to happen.

My first experience occurred about six months ago while driving home on a four-lane highway. A pickup truck in front of me in the right lane slowed down for a red light. I was able to slow down and stop in the left lane. At the time, I “checked my six” in the rearview mirror and saw another pickup truck approaching in the right lane at a high rate of speed.

My first thought was that the driver in the right lane would be killed. I tried to move to the left, but there was a vehicle in the left turn lane. Without attempting to slow down, the oncoming truck traveling between 45 and 55 mph passed between me and the vehicle in the right hand lane without hitting either one of us. If he had hit us from the rear, there could have been serious injury or potentially a post-crash fire. The other driver and I looked at each other and just shrugged, and drove away feeling that we had cheated death.

The next incident happened at a major intersection on a four-lane highway when the traffic light turned red. The car in the right lane stopped, and I began braking in the left lane while “checking my six.”

In my rearview mirror, I saw three empty dump trucks approaching at high speed. It was a few minutes after 5 p.m. on a Friday afternoon, and they were probably in a hurry to get their trucks back to

the yard and go home. It was obvious to me they were not going to be able to stop in time. My first inclination was to pull into the intersection and take my chances with the traffic coming from the right and left.

Before I could react, two of the trucks were able to stop, but the third could not, and he passed me on the left by going through the empty left turn lane and missing the traffic in the intersection. It would have been interesting—yet deadly—had another vehicle been in the left turn lane.

The third incident happened on the same highway approaching a different traffic light. As I was in the process of stopping, I “checked my six” and saw a flatbed truck loaded with 40-foot long pipe approaching from the rear. Even though the driver did not appear to be going too fast to stop, I moved over to the left lane to give him extra room.

Sure enough, he needed it. As he approached the intersection, his trailer began to “crow hop” from braking, and he continued through the red light and the intersection dumping his load of pipe on the road in the process.

My advice to drivers is to remain alert and to “check your six” often. Also, check your 9 and 3 o’clock positions if you are one of the first vehicles to enter an intersection after the light turns green. Someone may be running a red light. Stay alert and “check your six!”



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It's been at least a month since your last drill weekend. It's always a busy Saturday morning trying to get the day organized. There is accountability of the soldiers, finalizing pay and personnel files, training briefings and staff meetings. So what role does safety play?

Unit leaders must include safety and risk management in all aspects of a drill weekend. This begins with the drive to drill on Friday evening or Saturday morning. Some unit members travel long distances in hazardous conditions to attend drill. Commanders must be aware of this and tailor training schedules

risk assessment should take place at least one month prior and updated as necessary. A thorough review of the training schedule should take place at the start of every drill weekend. Commanders need to stress safety and insist the unit not take unnecessary risks.

Commanders are required to have a safety council meeting at least once a quarter, which will be conducted during a drill weekend. This is a valuable tool to assist in unit safety management. All council members should adjust their schedules to attend these meetings.

Inactive duty training (IDT) or drill weekends



if possible to ensure that they do not put their soldiers at unnecessary risk. This does not imply that training should be changed; rather, consideration should be given to adjusting the schedule in inclement weather conditions, or when conditions like fatigue result from night training.

First-line supervisors must enforce the safety policies of the unit commander. They must bear in mind that certain tasks have not been performed in at least 30 days and hazards could exist. A review of the standards is always a good idea. A unit wide and/or section safety brief should be conducted as well. A

are extremely busy. Commanders, leaders, and supervisors must all practice good risk management and not attempt to over task or overwork their soldiers. They must look ahead and be aware of the hazards during drill, after work, and the fact that soldiers travel long distances to return home. Risk management must be included in every aspect of the drill weekend and encouraged in all aspects of off-duty periods. 🚫

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Enforcing Standards Saves Lives

It's an NCO's responsibility to enforce standards. NCOs not only enforce the standards, they themselves perform to standard.

A prime contributor to maintenance accidents is poor supervision, or no supervision. Almost without exception, accidents and injuries occurring in maintenance shops reflect a supervisor's failure to enforce standards: the removal of machine guards, failure to use proper personal protective equipment, failure to follow procedures, and improper attitudes toward safe work practices.

Even when mechanics and operators have been trained to standard, they still require supervision and motivation. Refresher training is a good idea. In some cases, it is required and it just makes sense. A "just-get-the-job-done-fast" attitude will usually produce a job that is neither "done" nor "fast." Subsequently, the unit is not prepared for the mission. NCOs have the responsibility to prevent or eliminate these situations.

Familiarity should breed compliance

Experience has shown that most motor pool accidents are caused by improper or unsafe work practices. NCOs must insist on strict

compliance with safe work procedures, no matter how routine the task.

Familiarity, however, leads to complacency. Unfortunately, some soldiers abandon safety precautions on jobs that seem simple. On-the-spot correction of unsafe work practices can tighten up an operation that has gotten loose, and teach newly assigned soldiers that performance standards will be met. The quality of supervision has a direct influence on the attitudes of the soldiers in the unit.

The NCO who lets his soldiers operate equipment without guards or a grinder without eye protection, for instance, not only has he set a poor example for those soldiers, he has left those soldiers undefended and vulnerable to injury. They are now waiting for an accident to happen.

Protecting the worker

In addition, injured soldiers lose time from work simply because they failed to use protective equipment. Face shields, safety goggles, steel-toed boots, hearing protection, gloves, and respirators can be as important as weapons and ammo in carrying out a mission. NCOs have the responsibility not only to provide their soldiers with personal protective equipment, but also to ensure they use the right gear for the job. This equipment should be serviceable and Army approved. With units having impact credit cards, some items that are bought or used are not authorized. Commercial off the shelf (COTS) items are sometimes a quick way to replenish items; however, leaders must ensure the Army approves these items before purchasing.





Everyday discipline leads to mission accomplishment

Although it's impossible for an NCO to be physically present in all places at all times, a leader's presence can be imposed on every activity. That presence comes in attitude and example. NCOs must treat even the smallest error as substandard, because when workers get away with sloppy habits, they become complacent. Worse yet, bad habits do not correct themselves. Minor mistakes, combined with small lapses in judgment, can lead to serious accidents. By refusing to look the other way, NCOs have the power to prevent accidents even when they aren't there.

NCOs set the example by quality training, consistently enforcing standards, instilling discipline, and by providing subordinates with positive mentoring. There can be no greater responsibility. 

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Keeping soldiers safe

Safe, by-the-book performance keeps units ready to do their missions. To keep your unit ready, enforce the following common, everyday practices in your work areas:

- **Ban the use of any unapproved cleaning solvents, and keep them in closed containers in a well-ventilated area. See that spills are cleaned up immediately.**

- **Insist that soldiers use the right tool for the job. Never allow use of makeshift maintenance stands such as bricks, jacks, or blocks of wood.**

- **Ban the wearing of jewelry of any kind for soldiers working in, on, or around vehicles or other equipment. Ensure ID tags are secured on soldiers working around moving equipment, especially vehicle engines. Never allow loose clothing.**

- **Ensure that soldiers wear their protective gear while on the job. This includes hearing and eye protection.**

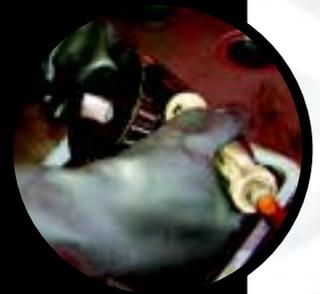
- **Separate high-noise operations from normal shop operations whenever possible. Ensure workers in high-noise areas have adequate hearing protection.**

- **Place fire extinguishers where they are easily accessible, and ensure they are marked so they can be seen.**

- **Ensure that power-tool cords are checked for worn spots or cuts. Watch for damaged or modified tools that allow soldiers to take dangerous shortcuts.**

- **Ensure grease pits are kept covered or guarded by a chain barrier at all times.**

- **Whenever possible, have soldiers operate engines outdoors. If work must be done indoors, ensure use of exhaust extension hoses (preferably, powered local exhaust hoses) to vent exhaust fumes outside.**



AN ELECTRIFYING EXPERIENCE

An M2A2 Bradley Fighting Vehicle (BFV) was operating as part of a multi-national peacekeeping force. The company's logistic package (LOGPAC) was operating in an unfamiliar area without prior reconnaissance. Low-hanging power lines and a radio antenna that was not tied down came into contact with one another resulting in the Bradley Commander (BC) being electrocuted. He suffered burns to the left and right hand, the left hip, and the left ear. There were no other injuries to any other personnel and no damage to the BFV, the antenna, or the power lines.

INSTALLATION ACCIDENT INVESTIGATIONS

Written by accident investigators to provide major lessons learned from recent installation accident investigations.

What happened?

The M2A2 Bradley was part of a forward deployed infantry battalion performing a multi-national peacekeeping mission. This unit had been deployed for six months and was very familiar with the mission that was being conducted. During the six months, the unit had performed LOGPAC in the same location that was located on a concrete hardstand. During this particular mission, the unit was required to perform LOGPAC in a different location that had not been reconnoitered or used previously.

Upon arriving at the selected LOGPAC site, the 1SG did not have adequate time to completely organize and emplace the fuel truck or 5-ton truck carrying class 1 before the company began arriving on-site. The first platoon on-site consisted of four BFVs and a fire support team vehicle (FISTV).

The first BFV refueled without incident and then moved to the vicinity of the 5-ton truck to receive class 1 and water. The gunner of the BFV dismounted and ground guided the vehicle near the 5-ton truck where the driver stopped, lowered the ramp, and shut the vehicle down. The ground guide then walked to the 5-ton truck to get class 1.

The unit 1SG noticed that the BFV was parked directly under power lines and that the center FM antenna of the vehicle was in contact with the power lines. The 1SG attempted to signal the BC that the antenna was touching the power lines, however, when the BC saw the 1SG gesturing towards the antenna, the BC turned and grasped the antenna with his left hand.

The BC was electrocuted when he touched the antenna. The BC's body went rigid and he was unable to release the antenna. The 1SG had the driver start the vehicle, raise the ramp and back the vehicle up until the antenna lost contact with the power line.

Soldiers in the platoon reacted immediately to the medical emergency. The BC was lowered from the BFV hatch where he was then treated by two medics who were on the scene. The BC was evacuated by ground in the 1SG's vehicle to a pre-established Casualty Collection Point (CCP). A 9-line MEDEVAC call was made while the vehicle was en route to the CCP. The BC

was then transferred to a MEDEVAC helicopter and transported to a medical facility. The BC was further evacuated to a U.S. based treatment facility.

Why did this happen?

The LOGPAC site was established in haste without regard to safe operations. The LOGPAC site that was used had not been reconnoitered prior to actual occupation, which would have identified the hazard of the low-hanging power lines. Additionally, the LOGPAC site was not adequately assessed upon arrival; the senior man in charge of establishing the LOGPAC did not conduct a safety site survey or provide guidance for the placement of the LOGPAC vehicles.

The BC being ultimately responsible for his Bradley, allowed the vehicle to be parked under low-hanging power lines. Additionally, the BC, knowing that touching an antenna that is in contact with power lines can cause electrocution, reached out and touched the antenna anyway. (The BC knew the standard, but ignored it—AKA indiscipline!)

Countermeasures

- Conduct a reconnaissance of LOGPAC areas to ensure suitability for refueling, rearming, and resupply. Identify potential hazards and inform units prior to execution of the operation.
- Integrate safety into mission planning and mission success. Slow the mission speed if necessary to maintain a safe environment. Take the time to establish a safe LOGPAC site and have the unit wait until this is accomplished prior to execution.
- Always remain aware of your surroundings and identify potential hazards on the ground or overhead.
- Emphasize the dangers of power lines to vehicles and the importance of tying vehicle antennas down. 

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Spring is here and summer is not too far away. Now is the time, before the thermometer climbs into the nineties, to prepare for the hazards that accompany summer activities.

Without planning for the risk, heat injuries can take a sudden toll. The typical heat casualty is usually involved in high physical activity, such as mission-oriented protective posture (MOPP) training, patrolling, road marches, land navigation, PT/unit runs, or is in a hot field environment. The most serious heat injuries are heat exhaustion and heat stroke, but don't forget heat cramps and sunburn.

Soldiers and leaders must train, not only to endure the heat, but to recognize its associated problems. If leaders don't recognize these symptoms, their soldiers are subject to heat injury and can "fall out" at an alarming rate. These injuries can be avoided by acclimatization, proper intake of fluids, modification of uniform wear, careful scheduling of training, and monitoring the Wet Bulb Globe Temperature. Guidance is given in GTA 05-08-012, Individual Safety Card.

For the boaters among us, now is the time to make sure your boat is ready for the coming summer months. Check the steering cables, throttle cables, cut-off switch, fuel lines, and all the other components. If something is questionable, replace it. Saving a dollar now will seem very minimal when you and your family are stranded dead in the water miles from shore.

Don't forget to check your personal flotation devices (PFDs). Kids grow! Just because they wore a life jacket last year doesn't mean it will fit this year. Be a responsible parent and make them wear their PFDs. Check all PFDs to ensure straps are serviceable and there are no rips and/or tears in the material. Be a good and responsible captain—when you run a boat, everything that happens on or about that boat is, by law, your responsibility. Incidentally, make sure you, your family, and friends are ready

too. Take that boating class—know the rules and boat smart from the start.

Sports and recreation injuries account for a large portion of reportable ground accidents, lost workdays, and hospital visits. They mean paperwork for us, added work for co-workers who pick up the load, and major pain for you—the soldier. Most of these injuries can be avoided with a little forethought and a lot more common sense.

There are many spring and summer activities that have risks associated with them. Take your time and use your head. If you ride a motorcycle, do it smart. Wear all of your protective gear (it is an Army requirement), and always assume no one can see you.

For all those lawn and gardening activities, start off easy. Make sure your tools are sharp, serviceable, and in good working order. It may have been some time since you last operated a piece of equipment. Re-familiarize yourself with it before you use it. If it has an operator's manual—read it! If home improvements are on the checklist, make sure the weather and the tools are going to cooperate. Don't use that aluminum ladder to clean out the gutters in a lightning storm.

Lastly, storm season is approaching. Be prepared. Stock up now on food and supplies. When a hurricane is 50 miles off shore or a funnel cloud is forming, you need to be taking shelter, not going to the grocery store or home improvement store for supplies.

These are just a few things to think about as we prepare for summer activities. We know the dangers, challenges, and the great opportunity for fun that exists for us during this season. Let's plan ahead and be prepared for the hazards of summer. 🏖️

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Plan Ahead For Summer Hazards

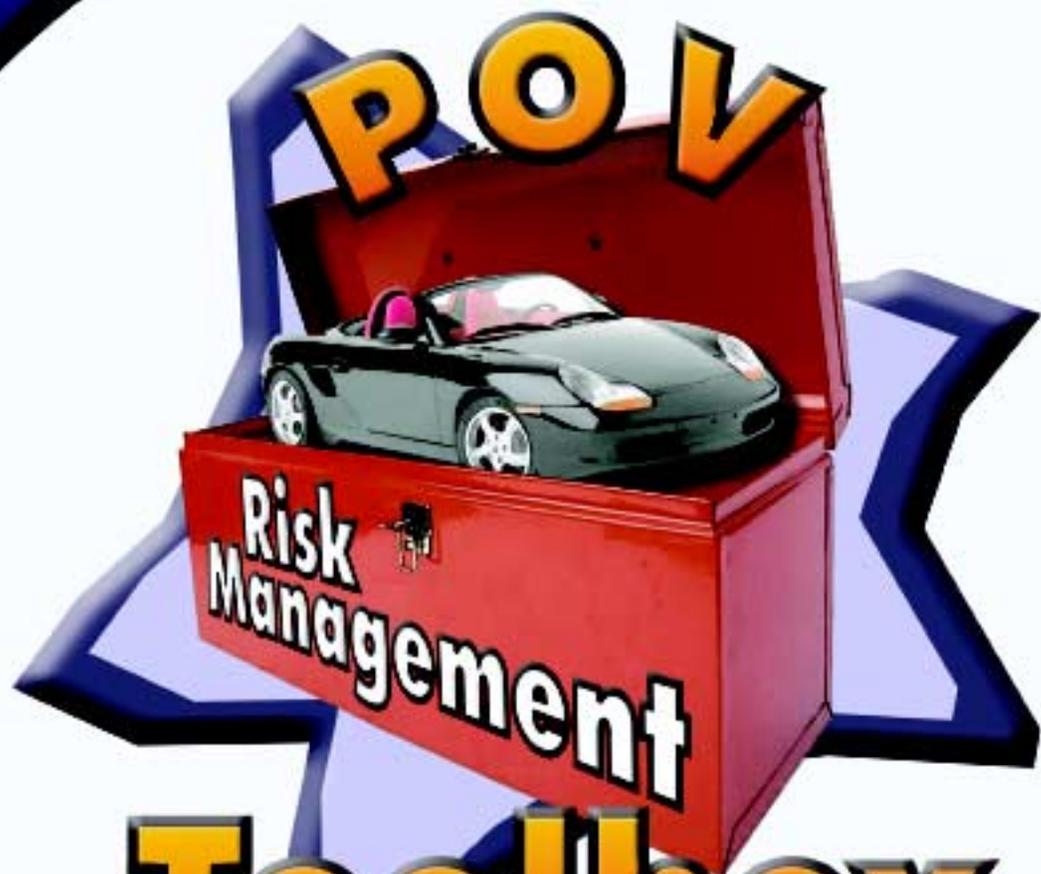
Maintenance Advisory on Army Space Heater

During recent Army deployments, there were several problems reported with Army space heaters that have been in long-term storage. The models in question are H-120, NSN 4520-01-367-2739 and H-120-1, NSN 4520-01-439-1682, LIN: H00586.

It is recommended that users inspect their heaters for the following potential problems. The references provided are from TM 9-4520-258-14, Change 2, and pertain to the troubleshooting and repair of the reported problem:

REPORTED PROBLEM	SYMPTOM	SOLUTION
LOOSE/STRIPPED FITTINGS.	DAMAGED THREADS/TUBES NOT PROPERLY ALIGNED CAUSING FUEL LEAKS.	TIGHTEN OR REPLACE AS REQUIRED. (PAGE 4-166, PARA 4-35)
HEATER WOULD NOT FUNCTION.	FUEL SUPPLY AND RETURN LINES REVERSED AT THE FUEL TANK.	RECONNECT FUEL LINES TO PROPER CONFIGURATION. (PAGE 4-166, PARA 4-35)
HEATERS SHIPPED WITH FUEL SELECTOR IN THE "EXTERNAL MODE."	UNIT WILL NOT OPERATE DUE TO INAPPROPRIATE FUEL VALVE SETTING.	SWITCH SELECTOR TO PROPER SETTING. (PAGE 1-6, PARA 1.9.B.8)
BROKEN CB2 CIRCUIT BREAKERS.	CIRCUIT BREAKER THREADED MOUNTS BREAK.	CHECK THAT BREAKER IS SECURELY MOUNTED TO THE PANEL. (PAGE 4-94, PARA 4-24)
FLAME OUTS.	BURNER STOPS/HEATER SHUTS OFF.	CHECK SPARK GAP. CLEAN FUEL FILTER. MAKE SURE THERE IS NO DIRT IN NOZZLE. MAKE SURE NO WATER OR DIRT IN FUEL FILTER. (PAGE 4-34, TABLE 4-2)
NO FUEL PRESSURE.	PRESSURE GAUGE READS NO PRESSURE.	CHECK FUEL FILTER. CHECK FUEL COUPLING FOR INSTALLATION OF PINS. CHECK FUEL PUMP. CHECK FOR LOOSE OR STRIPPED FITTINGS ON SUCTION SIDE OF PUMP. (PAGE 4-35, TABLE 4-2)
BAD REMOTE THERMOSTAT.	NO LED INDICATOR/ HEATER DOES RESPOND.	REPLACE REMOTE THERMOSTAT. (PAGE 4-59, PARA 4-16)
LOOSE BLOWER FAN.	HEATER FAN RATTLES AND DOESN'T ROTATE.	TIGHTEN OR REPLACE SET SCREW. (PAGE 4-144, PARA 4-31)
BAD THERMOSTATS.	HEATER WON'T CYCLE PROPERLY/WON'T OPERATE.	INSPECT FOR FAULTY THERMOSTAT, LOOSE TERMINAL OR BROKEN WIRE. (PAGE 4-124, PARA 4-28)
BROKEN FUEL COUPLER.	NO FUEL PRESSURE.	INSPECT COUPLER AND REPLACE AS REQUIRED. MAKE SURE PUMP TURNS FREELY. (PAGE 4-136, PARA 4-30)
BAD IGNITION TRANSFORMER.	BURNER DOESN'T OPERATE.	REPLACE TRANSFORMER. (PAGE 4-148, PARA 4-32)
HEATER WON'T RUN BELOW 15 DEGREES F.	FAILED DURING OPERATION.	CHECK SPARK GAP. MAKE SURE THERE IS NO WATER IN FUEL LINE THAT MAY FREEZE. CLEAN FUEL FILTER. (PAGE 4-34, PARA 5-21)

If you have problems with these items, contact your local CECOM power/environmental logistics assistant representative or Mr. Gregory Wesley at DSN 992-0522, gregory.wesley@mail1.monmouth.army.mil.



Toolbox

PRIVATELY OWNED VEHICLE
RISK MANAGEMENT TOOLBOX

For Commanders, Leaders,
Non-Commissioned Officers
& Individuals

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