



ARMY GROUND RISK-MANAGEMENT INFORMATION

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Keepin'
on
Track

Countermeasures

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U.S. ARMY COMBAT READINESS CENTER

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ATTENTION!

HEATERS NEED YEAR-ROUND MAINTENANCE

For many professions, the word “hazard” brings to mind visions of toxic chemicals, heavy moving machinery, explosives, or other commonplace dangers. However, there’s one hazard we’re all exposed to frequently and don’t even realize it—complacency.

Complacency is defined as “a feeling of security, often while unaware of some potential danger or defect.” This definition can be applied to an

individual performing a routine action while overlooking a change in conditions that could affect the outcome. The only way to overcome complacency is through thorough attention to detail and careful examination of all tasks being performed. Easier said than done, right?

How often do you check your car’s air conditioning in January, or the heater in July or August? Probably not very often. The Army has some of the most sophisticated and efficient equipment in the world, yet we run into the same problem. Our

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equipment is only as safe as its operators, and performing preventive maintenance checks and services (PMCS) on all components is vital, no matter the season. A rash of recent Bradley Fighting Vehicle (BFV) and M1 tank fires attributed to fuel leaks illustrates this point.

PMCS are specified in all vehicle technical manuals to ensure the user keeps the equipment fully operational,

safe, and mission capable. Our business is to keep Soldiers alive, intact, trained, and ready to fight. It's just as important to ensure our equipment is always ready to support the mission at hand.

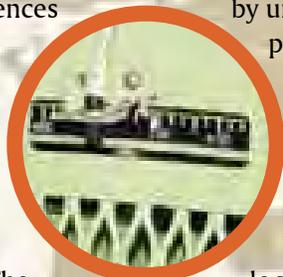
Required heater checks in Army vehicles often are overlooked during the summer months. The heaters haven't been used since the same checks were performed the last time, so why check them now? Although we don't commonly use heaters in the summer, there are still some inherent risks associated with the overall system that must be addressed. Regardless of the season, the inspection procedures must be completed as directed in the technical manuals.

All PMCS procedures require the heater system fuel lines, hoses, tubes, and fittings be checked for fuel leaks. The procedures specify that "any fuel leak" is a non-mission capable deficiency. All fuel leaks—regardless of category—must be reported immediately to the maintenance facility or element responsible for

supporting your unit or vehicles. Smaller leaks can evolve into more severe leaks and, if undetected, the fuel will pool in the vehicle's bilge.



Any amount of fuel in the vehicle's hull is a fire waiting to happen. This fuel can be disguised as fuel-soaked dirt or dust, both of which act as a flammable solid. The "mil" relation references currently listed in BFV technical manuals are transposed and will be corrected in the next manual revision. The correct turret position to perform PMCS checks on the heater is 5200 mils. The correct turret position to inspect all fuel tank fittings and lines is 4100 mils.



The recent increase in BFV fires has resulted in detailed procedural reviews and component analysis. Current procedures are under review to put more emphasis on heater systems. The review also places more focus on a detailed annual inspection to be performed before the anticipated cold season and after long-term vehicle storage. The procedures incorporate a heater inspection by unit-level maintenance personnel with the heater turned off (static inspection). This inspection includes the following checks:

1. Prepare the location to allow total visual and physical access to the heater.



2. Inspect the heater body and occupied space (including hoses and fittings) for any indications of prior or current leaks. Prior leaks can be identified by dried fuel stains.

3. Remove the top cover (commonly referred to as the “doghouse”).

4. Check all rubber hoses for leaks, dry rot, cracking, or hardening.

5. Check all fuel system junctions and connections for indications of leaks.

6. If no indications of fuel leaks or system deficiencies are found, continue to operational check 7. If leaks are detected, refer to check 13.

7. While observing the heater, have a helper turn it on.

8. Observe the heater and look for active leaks using the same procedures as the static inspection, outlined in checks 1 through 5.

9. Look for smoke around the heater and in the heated air stream.

10. Smell for an abnormally strong fuel presence in the heater area.

11. Let the heater run for 20 minutes and observe.

12. Turn the heater off.

13. If any fuel leaks or equipment deficiencies are found during this inspection, remove the heater and turn it in to direct support for service.

(Note: As the

Army transitions

from older to newer-style electronically controlled heaters, these photos may not reflect the same visual relation found in each vehicle. These photos reflect the newer style. The inspection procedures apply to all style heaters.)

Crewmembers must always be aware of the warning signs of potential fire—abnormal smells, smoke, flames, or fuel leaks—while operating their vehicles. If any area of your vehicle has

questionable shortcomings, report them to maintenance to be on the safe side. Always be sure someone is occupying the vehicle when the system is running. Don't allow your heater compartment to erupt into an uncontrollable fire that could've been prevented with an inspection.

Even if all procedures are followed to the letter, the potential for fire still exists. Crewmembers must physically rehearse fire and evacuation drills on a regular basis in accordance with the operator's manuals and applicable field manuals. As duty positions change, so do individual responsibilities during fire and evacuation. Institute these drills in your routine training activities and practice them until they become second nature. 

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The Basics of Brac

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How ready is your crew for a fire in your Bradley Fighting Vehicle (BFV)? What actions must the driver take? What about the Bradley commander (BC)? What about the guys in the back?

You say, “C’mon, that’s all common sense stuff—we did all that fire evacuation training years ago.” Unfortunately, common sense isn’t so common—but Bradley fires are. If you don’t rehearse basic fire evacuation drills, you’re leaving the safety of your Soldiers’ lives and equipment to chance. Let’s take a few minutes to review some of the basics.

First, let’s discuss

how the Bradley’s fire suppression system works. The BFV has two separate fire suppression systems—one for the squad compartment and one for the engine compartment. Each system has separate fire bottles. The squad compartment bottles are located next to the turret. The fire bottle for the engine compartment is found underneath the instrument panel. It’s important to remember the two systems are totally independent of one another—the activation of one system won’t automatically trigger the other.

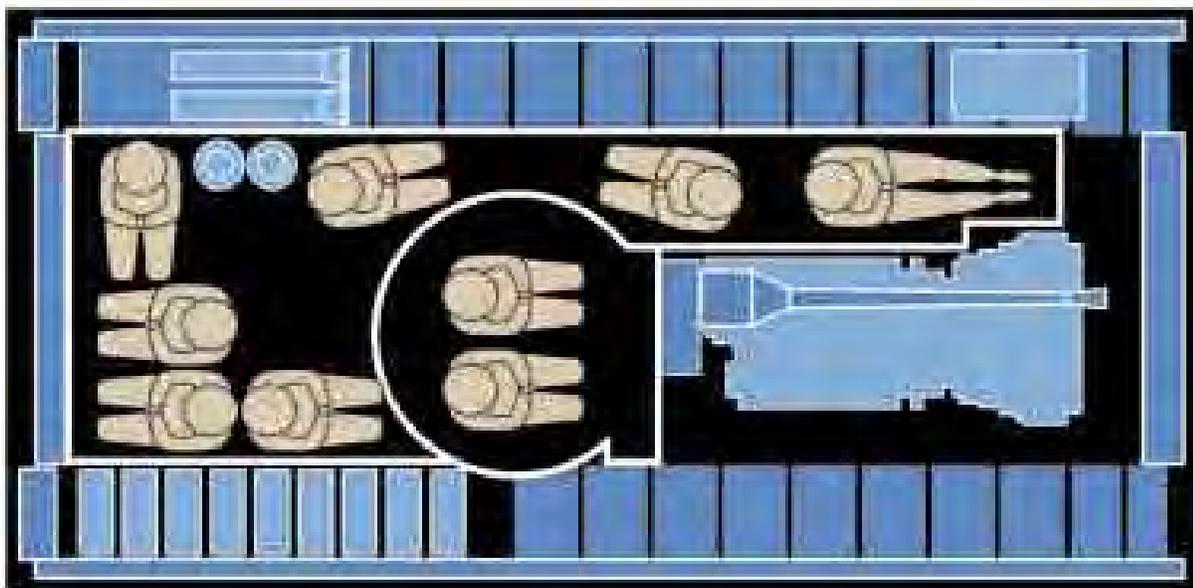
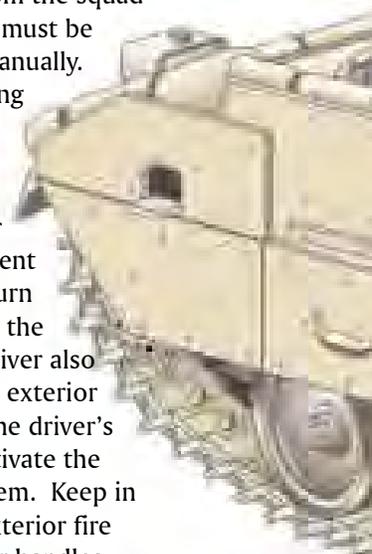
The squad system (the one in the back) will work in either the automatic mode or

manually, depending on how the switch is set. In the automatic mode, the system activates and discharges Halon fire suppression agent once the vehicle sensors detect a fire. The Halon comes from the two rear fire bottles in the squad compartment. Pulling the fire extinguisher handle in the squad compartment’s right rear (by the ramp) or the exterior handle at the Bradley’s right rear manually activates the system.

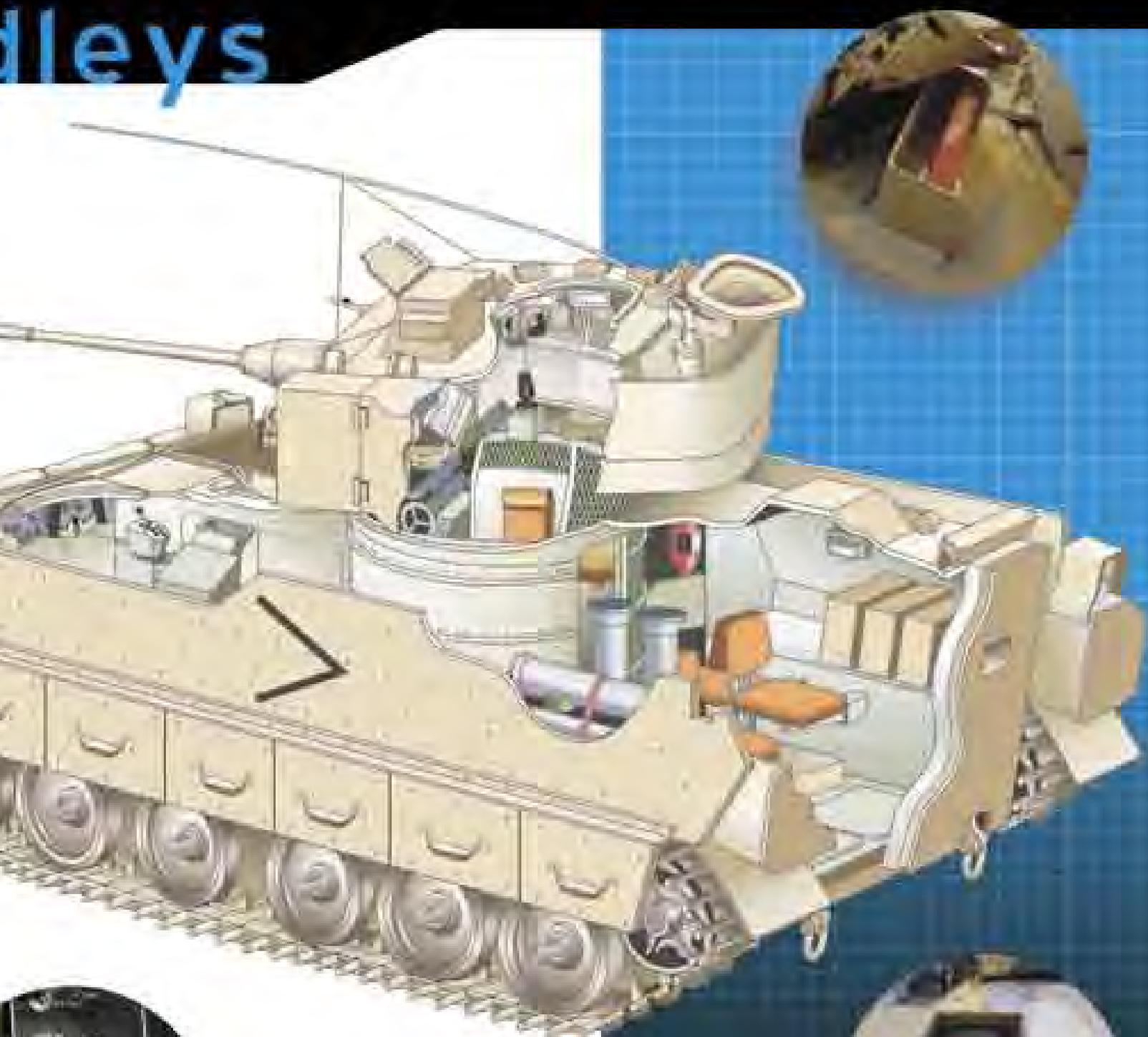
There’s a common myth that Halon will suck the oxygen from the lungs of unknowing Soldiers. Don’t panic! Those horror stories are simply untrue and Army “urban legend.” The threat of getting burned, however, is very real. The good news is there’s plenty

of time to get out if a fire does occur. A good load plan and rehearsals of Crew Drill 3 in Field Manual (FM) 3-21.71 (7-7J) are important aspects of the evacuation process. And, this drill can be used or modified for any of the turreted Bradley variants.

The engine fire suppression system is separate from the squad system and must be activated manually. After shutting down the engine, the driver must reach under the instrument panel and turn the knob to the left. The driver also can pull the exterior handle by the driver’s hatch to activate the engine system. Keep in mind the exterior fire extinguisher handles



dleys



operate only ONE system. The right-rear handle is for the crew compartment; the left-front handle is for the engine compartment.

When was the last time you checked the fire suppression system? How about that fire bottle under the instrument panel? True, it's a pain to check. However, without good preventive maintenance checks and services (PMCS), how do you know it'll work if you need it? Be sure to check the cables that run from the outside handles to the bottle valves. These cables deteriorate, lose support, and develop kinks over time. If the cables look bad, write them up and have the mechanics check them out.

Surviving a Bradley fire is a good thing, but preventing them is the ultimate key to a long and happy Army career and life. PMCS and attention to detail are vital to keeping BFVs safe and serviceable. Ground Precautionary Message (GPM) 02-001 addresses a problem with cracked fuel fittings on the engine. This GPM directs mechanics to replace the brass fittings with steel fittings the next time they pull the pack. Do yourself a favor and ensure the fuel fittings on your Bradley have been replaced.

There's been a recurring problem over the years with the driver's night viewer power cable getting pinched in the driver's hatch. The cable then can short out and cause a fire in the vehicle. Engineers developed a new cable and routing to fix this problem, described in issue number 31 of "Bradley Bits."

"Bradley Bits" can be found on the Army Knowledge Online Web site at www.us.army.mil/suite/doc/1518966.

Finally, keep the hull clean. If possible, pull the pack in a place where you can wash out the hull (easier said than done—but a rag will help!). A large pool of petroleum, oil, or lubricants in the bottom of the hull can quickly become a fire hazard.

Don't let your BFV become a fire statistic in the Combat Readiness Center database. Follow your -10 PMCS and take a minute to educate yourself on the fire suppression system. If you're trained and know what to do, you won't have to be afraid. You can save your life and preserve a critical piece of equipment. 

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DID YOU KNOW?

BFVs in Iraq are racking up a normal year's mileage in a single month, in addition to carrying heavy loads such as reactive armor. Bradley transmissions are taking the brunt of this punishment and need special care. Your BFV transmission failing in the middle of an enemy engagement isn't the most ideal of scenarios, so take the following precautions to ensure your crew makes it back to the FOB:

- Take Army Oil and Analysis Program samples every 60 days and follow the lab's guidance. The lab in theater is at Camp Anaconda, Balad.

Call them at DSN (312) 992-3986 (prompt 1-7828) or e-mail aoapiraq@mmc.army.mil.

- If the mission doesn't allow for oil analysis, then change the transmission fluid and filter every 750 miles (rather than the normal 1,500 miles) in accordance with Field Manual 90-3, *Desert Operations*.

- Not sure what's wrong with a transmission? Your Tank-Automotive and Armaments Command (TACOM) Logistics Assistance Representative (LAR), UDLP, or GD Field Service representatives can help with troubleshooting.

- Protect unserviceable transmissions from further sand or rain damage by covering all openings. Also use the reusable shipping container, if available.

- Turn in unserviceable transmissions for repair. Again, your TACOM LAR can help.

—Reprinted courtesy May 2005 PS magazine

Great Bits

SFC (RET) BENNIE CAGLE

Shut it down!

M1 tank fires continue to plague armor crews both in theater and at home. The most recent Class A tank fire occurred in Iraq when an M1A1 experienced mechanical problems during a combat mission. The crew smelled diesel fuel and aborted the tank engine, but the right side of the tank began to smoke heavily. The crew pulled the manual engine fire suppression T-handles and conducted evacuation drills. All crewmembers egressed without injury; however, the tank was destroyed.

Tank fires are extremely tense situations that call for a clear head and decisive action. In most any tank-related incident, the first three things that must be addressed are evacuation of the tank, extinguishing any fire, and shutting down the engine. In many cases, aborting the engine is a crucial part of extinguishing the fire.





Mazin' Tanks!

M1 engines produce a lot of power and heat. They also are loaded with electrical components, fuel, and oil, none of which are conducive to a stable atmosphere in an accident scenario. So, just how do you shut down the engine on an M1 tank?

According to the operator's manual for the various M1 configurations, there are only four ways to shut the engine down. Two of these shutdown mechanisms are located in the driver's compartment: the ENGINE SHUTDOWN switch on the driver's instrument display (DID), which is the usual way

to shut the engine down; and the ENGINE 2ND SHOT switch on the DID, which will shut the engine down and then, 18 seconds later, discharge the second engine fire bottle.

The third mechanism is the emergency fuel shutoff located in the turret wall. This shutoff is a yellow T-handle that must be pulled out and held until the engine shuts down. After the engine shuts down, the handle must be pushed back in

completely.

The fourth and quickest way to shut down the engine is with the fuel quick disconnect (QD). The turret must be over the side to reach the fuel QD. The procedure is to open the battery box covers and then open the top-deck right grille door. Inside are various cable connectors and a red QD. This red QD is the fuel line. The coupling must be pulled back and turned counter-clockwise to disconnect and stop fuel flow to the engine. The engine will shut down when this procedure is performed.

Using whichever of the four methods above you choose, always SHUT IT DOWN if an accident occurs.

The T-handle

M1 crewmembers should know what the T-handle is—that bright-red fire extinguisher handle on the outside left of the tank. There are a lot of myths about this handle. Some Soldiers believe it will shut down the engine. Some Soldiers think that after you initiate the 2ND SHOT switch on the DID, the 2ND SHOT bottle should go off immediately. If the 2ND SHOT bottle doesn't go off by the time the crew gets on the ground—so the legend

goes—then they should pull the handle.

Both these assumptions are WRONG! Pulling the T-handle only accomplishes discharging the 2ND SHOT Halon fire extinguisher bottle—nothing more. Pulling the T-handle will not shut down the engine. If the fire extinguisher bottle discharges while the engine is running, the Halon will be sucked up by the transmission oil cooler fans and ejected out the tank's rear.

Moving the FIRE EXTINGUISHER 2ND SHOT switch to the forward position will shut down the engine. The 2ND SHOT bottle will discharge approximately 18 seconds after the switch is moved forward. This time delay is designed to give the engine time to shut down and reduce airflow, thereby allowing the Halon to remain in the engine compartment. If the engine is already shut down and the switch is moved to the forward position, the bottle will discharge immediately.

Should the crew pull the T-handle if they

evacuate the tank after moving the switch to the forward position? If the engine is still winding down the crew should let the bottle discharge electronically, as the system was designed. They should pull the T-handle if the bottle doesn't discharge after the engine shuts down completely.

M1 tanks can and do burn. The Halon system will extinguish most fires if it's used properly. Understanding the tank and its fire suppression system will give crews and vehicles a fighting chance if a fire breaks out.

Editor's note: This article was authored by SFC (RET) Cagle when he was the armor liaison NCO at the Combat Readiness Center. It was first published in the October 2002 Countermeasure and updated for publication in this issue. 🚗

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.

Mission Time, Not Training Time

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U.S. Army Combat Readiness Center

Mission time isn't training time. Even during the "simplest" of missions, situations can and do happen that require quick thinking and reaction. A sudden enemy ambush or improvised explosive device attack isn't the time to be training on what to do. The M1A2 accident in Baghdad below occurred in Baghdad during one such "easy" mission.



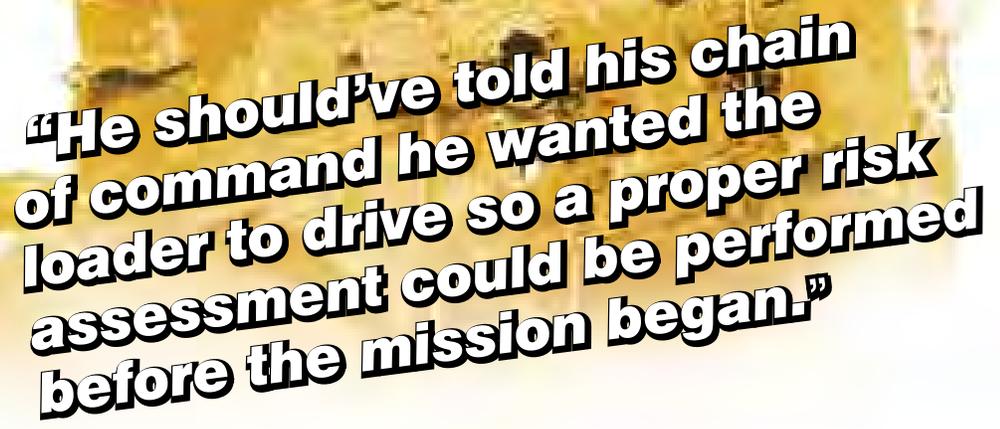
The mission was an administrative move of a tank section to a HETT pick-up point about 26 kilometers away. The warning order was issued the day before the move. On the day of the mission, the tank commander (TC) and section sergeant of one of the vehicles involved, C24, briefed the TC of C21, the accident vehicle. C24's TC wanted C21's gunner to drive the tank because the regular driver wasn't available.

The company commander gave the order to move over the radio and gave a start time of 0945, with link-up at 1030. About 1000, C21's TC told the new loader he was going to drive the tank. The TC thought the mission would provide a good opportunity to begin the loader's driver's training, since he was scheduled to move into a driver's slot anyway. However, the TC didn't consult the section sergeant before he made the decision to let the new loader drive.

The section departed about 1015. The majority of the route was on a hardball road. C21 was the lead tank when the movement began. The section sergeant thought C21 was moving too slow, so his tank passed C21 and took another route to the hardball road. When he saw C21 had made it to the road, the section sergeant directed his driver to continue.

The section sergeant started the section moving again and decided to keep a closer eye on the rear. C21 was lagging again, but then began maintaining a 300- to 500-meter interval. The section sergeant thought C21's TC was simply keeping a longer-than-normal "dust" interval. He quickly lost sight of C21 due to the interval and a curve in the road.

The section sergeant tried to contact C21's TC on the radio, but



"He should've told his chain of command he wanted the loader to drive so a proper risk assessment could be performed before the mission began."

he didn't receive a reply. As he looked back down the trail, the section sergeant saw a cloud of black smoke rising up. Thinking C21 had encountered an ambush, he had his driver turn around and "step on it." The section sergeant then heard a call over the net that a tank had overturned.

Fortunately, the only injuries stemming from C21's rollover was a broken nose and lacerated knee. However, a fire started in the exhaust section of the tank's engine compartment. This part of the M1 doesn't have fire sensors or vehicle extinguisher outlets, so the fire couldn't be suppressed by conventional means. The driver executed published fire procedures and personnel emptied 20 dry chemical fire extinguishers, but it took packing mud into the exhaust outlet to put out the fire. The tank suffered Class B damage.

Why did this accident happen? There are several reasons. First, C21's TC directed an unlicensed, inexperienced Soldier to drive the tank. The Soldier had driven an M1 for only a brief time in advanced individual training; he had 18 to 20 hours of simulation time. C21's TC also made a risk decision beyond his level of leadership. He should've told his chain of command he wanted the

loader to drive so a proper risk assessment could be performed before the mission began. Finally, the command didn't provide adequate time for the movement. There was only 45 minutes between the word to move and the link-up time, and the section started movement 30 minutes late. These factors caused the section leader to push the drivers beyond safe limits.

We understand the time restraints during certain missions, but there are risk decisions that must be made to keep all personnel safe for the next fight. Sustainment training must occur often enough to train new Soldiers and minimize skill decay. Army units train and successfully accomplish their missions through frequent sustainment training on critical tasks (see Field Manual 25-100, paragraph 2-22). In a combat zone, leaders must assess the mission's risks and hazards before training their Soldiers during the mission. Missions are not the time for training! 🚫

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is that what you're wearing?

One of the standards Bradley Fighting Vehicle and tank crews deviate from most is proper wear of the uniform and personal protective equipment. Burns from a vehicle fire are no fun! For instance, mixing Nomex and the combat vehicle crewman (CVC) uniform with issue-type polypropylene underwear can give a whole new meaning to the words “rump roast.”

Nomex can withstand temperatures up to 700 degrees F.

Polypro, on the other hand, melts at less than half that heat. During a fire, Nomex can transfer enough heat to your polypro underwear to melt it to your skin! That type of injury definitely isn't comfortable.

So, if you can't wear polypro, what can you do? During winter, a combat vehicle is just like a refrigerator—and in the summer, just like an oven! Your only choice is to wear aramid or 100-percent cotton underwear. Below is a table of national stock numbers (NSNs) for both types. Tell your supply folks to use an advice code

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and
MR. LARRY HASTY
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Fort Knox, KY

of 2b, which will ensure you don't get a substitute made of synthetic materials.

A second issue is the gloves available for wear with the Nomex CVC uniform. Gloves procured through a commercial vendor or at the PX may not meet flame or fire-resistant test criteria and therefore aren't suitable for wear with the Nomex uniform. Several years ago, the Army adopted the Glove, Flyers, Summer and the Glove, Flyers, Intermediate, Cold Weather as replacements for the older CVC glove. The list below provides the NSNs for the proper gloves to wear with your Nomex uniform in hot or cold climates.

Two balaclavas/hoods are authorized for crewmen to wear with the Nomex uniform, depending on the temperature. The Hood, Antiflash (NSN 8415-01-268-3473) is made from a light material and suitable for wear in hot weather. The Hood, CVC (NSN 8415-01-111-1159) is designed for wear in colder climates.

There have been numerous reports from Iraq and Afghanistan that armor crews are wearing the aviation battle dress uniform (ABDU) instead of the CVC one-piece Nomex coverall. The ABDU doesn't have a built-in integral extraction strap, as does the one-piece Nomex uniform. The extraction strap allows other crewmen or emergency personnel to pull an unconscious or injured crewman up and out of the vehicle in emergency situations.

Finally, keep the CVC uniform clean. Oil, grease, or household starch will cause Nomex fabric to burn. Cleaning the CVC uniform to remove these contaminants will restore its fire-retardant properties.

Don't survive a vehicle fire only to find yourself with polypro

melted to your skin or third-degree burns to your hands. Worn properly, the CVC uniform and gloves will help protect you from burns should a fire happen in your combat vehicle. 

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Gloves, Flyers, Summer

- 8415-01-482-8417 Size 4
- 8415-01-040-2012 Size 5
- 8415-01-040-1453 Size 6
- 8415-01-029-0109 Size 7
- 8415-01-029-0111 Size 8
- 8415-01-029-0112 Size 9
- 8415-01-029-0113 Size 10
- 8415-01-029-0116 Size 11
- 8415-01-482-8420 Size 12

Gloves, Flyers, Intermediate, Cold Weather

- 8415-01-446-9247 Size 5
- 8415-01-446-9248 Size 6
- 8415-01-446-9252 Size 7
- 8415-01-446-9253 Size 8
- 8415-01-446-9254 Size 9
- 8415-01-446-9256 Size 10
- 8415-01-446-9259 Size 11

Drawers, 100-percent Cotton, Cold Weather

- 8415-01-051-1175 X-small
- 8415-00-782-3226 Small
- 8415-00-782-3227 Medium
- 8415-00-782-3228 Large
- 8415-00-782-3229 X-large

Undershirt, 100-percent Cotton, Cold Weather

- 8415-01-051-1174 X-small
- 8415-00-270-2012 Small
- 8415-00-270-2013 Medium
- 8415-00-270-2014 Large
- 8415-00-270-2015 X-large

Undershirt, Flyers, Man, Aramid

- 8415-01-043-8375 X-small
- 8415-00-485-6547 Small
- 8415-00-485-6548 Medium
- 8415-00-485-6680 Large
- 8415-00-485-6681 X-large

Drawers, Flyers, Aramid

- 8415-01-043-4036 X-small
- 8415-00-467-4075 Small
- 8415-00-467-4076 Medium
- 8415-00-467-4078 Large
- 8415-00-467-4100 X-large

Drawers, Brief, Cotton, Brown

- 8420-01-112-1957 Size 28
- 8420-01-112-1958 Size 30
- 8420-01-112-1959 Size 32
- 8420-01-112-1960 Size 34
- 8420-01-112-1961 Size 36
- 8420-01-112-1962 Size 38
- 8420-01-112-1963 Size 40
- 8420-01-112-1964 Size 42
- 8420-01-112-1965 Size 44

Undershirt, Man, Cotton, Brown

- 8420-01-112-1472 XX-small
- 8420-01-112-1473 X-small
- 8420-01-112-1474 Small
- 8420-01-112-1475 Medium
- 8420-01-112-1476 Large
- 8420-01-112-1477 X-large
- 8420-01-112-1478 XX-large
- 8420-01-112-1479 XXX-large

But I Was Tired!

DENNIS MOTOWYLAK

Safety Intern
XVIII Airborne Corps
Fort Bragg, NC

It was 0100, and we were in the middle of a 2-week field training exercise. We'd just settled down to sleep from running tank lanes on the drop zone—a job we'd been doing since 0500 the day before. The entire armor company was a mere step away from complete exhaustion. The combination of securing our gear and the rush to our cots almost took us to that next step.

Another combat medic and I were assigned to provide medical support. The other medic was a brand-new Soldier, just out of advanced individual training the month before. He didn't have an M113 license and had never even ridden in an ambulance carrier. Since I was licensed, I got to be both the driver and track commander. This wasn't a matter of prestige, however—being driver, navigator, communications coordinator, mentor, and trainer is a little more tiresome than sharing responsibilities.

We'd finally made it to our racks and I was "out cold" for about 15 minutes when I was awakened abruptly by the company commander. He yelled, "Wake up! SGT Graham just crushed his hand in the

breach block!" I grabbed the other medic, and we sprinted to the spot where the tankers had gathered around to help SGT Graham. We stabilized SGT Graham by the light from the tankers' flashlights, chem lights, and any other kind of illumination they could find. His hand was crushed beyond recognition, and he needed immediate hospital attention.

I ran to get our M113 and radioed for an evacuation vehicle to meet us at a rally point. I then started the carrier and drove over to pick up SGT Graham. Once he was secured inside, we set off for the rally point. The trip was smooth, and SGT Graham was transferred into a wheeled ambulance for transport to the local hospital.

Everything was going great until we returned to the bivouac area. In the fatigued—yet adrenaline-filled—rush to evacuate SGT Graham, I didn't use a ground guide. I only traveled 500 feet, but I managed to bump and damage a HMMWV, crush a pile of rations, pull down two tents, and sever the power line from the field generator. All this destruction occurred in less than 2 minutes. Luckily I didn't run over

any Soldiers who might've been sleeping through the excitement.

Although the damage wasn't costly, there was a lot of it. The company commander was satisfied that SGT Graham's hand was saved, so I wasn't reprimanded or punished. However, he did make me provide the morning vehicle safety brief for the remainder of my time in the unit.

My "adventure" was the topic of conversation for many years to come. I've often heard the



Short Three

Soldiers

JIM BINFORD

Safety Intern
1st Cavalry Division
Fort Hood, TX

I was stationed at Fort Hood as an active-duty Soldier in the late 1980s. My crew and I were cleaning our Bradley Fighting Vehicle (BFV) one day when a Soldier came running into the motor pool, obviously very distressed. He was screaming about an accident somewhere on the tank trail.

We jumped in my POV and went to look for the accident. By the time we got to the scene, a MEDEVAC helicopter was already there and medics were working on the injured Soldiers. My gunner turned white as he looked at me and said, "That guy's dead." I saw that CPR was being administered to the Soldier I thought the gunner was talking about. I said, "As long as he's being worked on, he still has a chance." My gunner said, "I'm talking about the guy by your foot."

I looked under the overturned BFV and saw a Soldier lying motionless under the TOW launch tubes. I hadn't seen him when we first arrived. He was dead, and he wouldn't be the only one. Later that night, two more Soldiers died from their injuries.

The accident investigation

team discovered the driver wasn't licensed, and neither was anyone else in the vehicle. The unit had doubled its services quota that month. The mechanic decided to road-test the vehicle himself to complete its services—even though he wasn't licensed or trained to drive a BFV. He took a turn too fast and rolled the vehicle. Had there been a guard on the gates to check dispatch books, this accident never would've happened. Had the mechanic had the patience to wait for a licensed driver, those three Soldiers would be alive today.

There are so many "if only" scenarios, but here's the bottom line. We must know our Soldiers' capabilities and train them to never do anything outside their operational area, regardless of mission priority. 

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entire company learned a valuable lesson from my mistakes that night. Everyone in the unit—including me and especially the new medic—learned the importance of using a ground guide, regardless of the situation or our physical state. Tactical vehicles are great and do their jobs well, but they're deadly to unknowing Soldiers on the ground. Always use a ground guide! 

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"Letters From War: Medical" DVD Now Available

The Army Combat Readiness Center recently released "Medical," the fourth DVD in its Letters From War series. Among other features, the DVD highlights a scenario where a member of the Army medical team from the combat area prepares an incoming military member for the environmental hazards he'll face while deployed to Southwest Asia. Additional resources including relevant field manuals, Department of the Army

pamphlets, and reference guides are included as DVD-ROM content on the disk. Topics covered include an introduction to the Army Center for Health Promotion and Preventive Medicine Web site; heat protection; vector protection; eye protection; hearing protection; and respiratory protection.

To order this or any of the Letters From War series DVDs, go to <http://dodimagery.afis.osd.mil/davis/> and type in "Letters From War" or "medical" as a

keyword search. Then select the DVD you want and add it to the shopping cart. If you need more than one copy, ask for extra copies in the "comments" box. Please remember this product is restricted in release for official use only.

We'll announce upcoming DVDs in future issues of *Countermeasure*. Future topics include "The Joint IED Defeat Task Force UNCUT" and "Fort to Port." Please give us feedback—we want to know if we're on the right track! For more information contact Rebecca Nolin at (334) 255-2067, DSN 558-2067, or by e-mail at video@safetycenter.army.mil. 



The Army National Guard light Infantry unit mobilized in November 2004 for deployment to Iraq, where they would serve as a motorized rifle company with a brigade combat team. The unit conducted readiness preparations at their home station during normal drill periods in November and December. They also performed a mission analysis during this time and identified vehicle crews to meet the MTOE requirements for motorized operations. Upon arrival at their mobilization (MOB) station, they conducted every mission in a tactical operations format.

Too Little Training, Too Much Stress

ACCIDENT INVESTIGATION DIVISION
U.S. Army Combat Readiness Center

Part of the MOB station training consisted of day and night qualification on the multi-purpose machine gun range. The night before the range exercise, unit leadership identified which Soldiers would participate in the exercise and assigned vehicles for each crew. The accident vehicle's driver and the other Soldiers woke up at around 0500 the next morning and prepared their equipment. The driver and truck commander (TC) went to the motor pool and picked up the accident vehicle, an M1025 HMMWV. They conducted preventive maintenance checks and

services, but without the technical manual because one wasn't available. The convoy commander gave an abbreviated convoy briefing and identified the order of march and tactical vehicle speed before the unit departed for the range.

At approximately 1830, the driver prepared for movement from the range to the National Guard Training Center (NGTC). The convoy consisted of three vehicles, and the accident vehicle—carrying four Soldiers—was the last one. About 3 to 5 minutes before the accident convoy departed, a five-vehicle convoy left the range for the NGTC. The earlier

convoy took a wrong turn and became intermixed with the accident convoy.

What happened

As the intermixed convoy turned onto the highway toward post, an unidentified vehicle from the earlier convoy was in front of the accident vehicle. At about 1913, the accident HMMWV—traveling about 54 mph—approached a curve north of the entrance gate. As the vehicle entered the curve, the driver made an abrupt left turn away from two barricades blocking an access road to the right. The abrupt maneuver caused the HMMWV's rear to slide right.

The driver attempted to correct the slide by turning the vehicle's steering wheel to the right. However, the HMMWV went into an uncontrolled left slide toward a ditch on the right, just past the access road. The vehicle slid off the road about 15 feet. The left-front and left-rear tire seals broke during the slide, causing the driver-side tires to deflate.

The deflated wheels regained traction and the HMMWV

flipped toward the driver's side, eventually rolling 360 degrees. After rotating another 180 degrees, the vehicle impacted the ground on the passenger-side roof and overturned back onto its wheels. When the HMMWV finally came to rest, it was facing in the opposite direction of its original path.

None of the HMMWV's four occupants were wearing seatbelts. The senior occupant (SO) and left-side passenger in the back seat were thrown from the vehicle during the rollover. The driver and right-side passenger in the back seat remained in the HMMWV. The ejected back-seat passenger suffered fatal injuries.

Why it happened

The home station battalion provided only 2 days of classroom and hands-on training for new drivers at battalion level.

This policy violated standards set in Training Circular 21-305-4, which requires 40 hours of training. The home station battalion also didn't document drivers' qualifications on DA Form 348-E.

The driver and SO were overconfident. The driver had driven this road many times before, but the HMMWV was traveling too fast for the curve. The driver and SO also neglected one of their primary responsibilities by failing to ensure all occupants wore their seatbelts.

The driver didn't receive adequate school and unit training for operating the HMMWV in limited-visibility conditions. The SO also didn't properly supervise the driver, who was driving the HMMWV in excess of 50 mph in a 30-mph zone. As a result, the driver lost control of the vehicle as he attempted to negotiate the curve.

The driver's training program implemented in the accident unit and most other units of this major Army component was deficient. Soldiers were not provided sufficient training to become proficient in on- and off-road driving conditions. Drivers shouldn't acquire their off-road driving skills when they're in Iraq on a support mission. Instead, they should get this vital training while they're still home and in a controlled environment.

Recommendations

- Include SO responsibilities in pre-deployment training, and ensure training addresses all requirements in Army Regulation (AR) 600-55.

- Ensure units activated for duty in Iraq understand the requirements for driver's training as outlined in AR 600-55.

- Ensure pre-deployment driver's training for units deploying to Iraq is tailored to their mission there.

- Enforce the requirements of AR 385-55 and all aspects of safe motor vehicle operations. Also incorporate additional PCI/PCC checks to ensure Soldiers are using safety equipment and seatbelts, which increase survivability in a vehicle accident.

- Emphasize how not wearing seatbelts can lead to injuries and fatalities, and stress the requirements of AR 385-55 regarding the use of seatbelts during vehicle operations. Also emphasize the requirement in AR 385-55 that convoy commanders conduct safety briefings before any convoy operation during training.

- Assist the training unit in ensuring strict enforcement of seatbelt use during convoy operations.

Today's training is fast pace, but training to standard is still a requirement that must be on target in every training event. Mothers and fathers have entrusted us with the care of their sons and daughters. As NCOs and officers, we must take care of them. 

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.

SAVING SOLDIERS

One Breath at a Time

Soldiers returning home from Iraq or Afghanistan often are ready to “let their hair down” and party to celebrate making it back alive from combat. However, far too many returning Soldiers are dying in alcohol-related POV and motorcycle crashes. Last summer, the Combat Readiness Center recognized Legal Limit BreathScan devices as a potential “best practice” from U.S. Army-Europe. Since then, units in all four sister services have adopted the BreathScan as a way to protect troops wherever alcohol is available. Below is a testimonial from a Fort Meade, MD, Soldier:

“One of our sergeants was the designated driver while out to dinner with friends. He assumed he could have a couple of drinks. But, when it was time to go, he

used a BreathScan to be safe. He had a buddy administer the test and, to his surprise, he was legally drunk. Instead of risking his friends’ lives, he suggested they all go to a movie at the same mall so he would have time to sober up. Not only did they see a great movie, they made it home safely!”

For more information on the Legal Limit BreathScan or to order some for your unit, visit www.povsafety.com on the Web. Orders may also be placed through Mr. Larry Martin, developer of the BreathScan, by e-mail at lmartin@povsafety.com or by calling (727) 410-3048. 🚗

Comments regarding “News & Notes” may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.



ovement operations might not sound dangerous, and they’re certainly not all that glamorous. As my unit’s movement officer, I must confess I wasn’t thrilled at the prospect of moving our equipment—all 1,500 pieces of it—from theater and being the last to arrive home. We were redeploying from Iraq after a year-long tour, and all of us were anxious to see our families and loved ones.

AD ALMO

Despite our “get-home-itis,” we managed to clean all the equipment in record time and with no injuries. This feat was due to the great leadership and supervision of our NCOs. Everyone got on the plane and headed home, except about 15 troops who stayed behind to help load the ship.

We received the last of our equipment at the port the day before our ship arrived. The equipment was mostly ISU-90s, but there were a few broken vehicles that had been hauled to the staging area by privately contracted civilians. Everything was accounted for except a broken fuel truck, which finally arrived at 2300 that night. By that time, we’d been up for 18 hours and really wanted to get some sleep. Needless to say, we were anxious to get the fuel truck unloaded and end the day.





Post Rolling Disaster

Since the fuel truck wasn't operational, the contractors had winched it onto a low-boy wrecker for the drive. Now the problem was getting the truck off the low-boy. We didn't have a crane that could lift the vehicle, and it would've taken hours to get one. The contractor driver suggested elevating the low-boy's platform to roll the fuel truck off the back while another driver rode its brakes. I

tired, I still was concerned the truck's tires might slide off the low-boy's side as it rolled down the platform. The sergeant got in the truck and gave the thumbs-up for the contractor to lift the platform. Everything looked good as the truck slowly started to back off with its wheels straight, and my mind eased a little.

By that time, we'd been up for 18 hours and really wanted to get some sleep. Needless to say, we were anxious to get the fuel truck unloaded and end the day.

thought this sounded like a great idea, and we even had a sergeant who was licensed and had lots of experience driving fuel trucks.

Even though I was

However, the truck shot off the wrecker as soon as its rear tires hit the ramp. I remember thinking, "Wow! This guy really knows how to drive!" That confidence

quickly faded as the truck kept rolling right through a barbed-wire fence and crossed the street toward our stacked ISUs. Fortunately the truck's rear tires hit a cement barricade just short of the ISUs, and the vehicle came to an abrupt stop. Disaster was averted another day.

If you've ever driven a HEMMT or fuel truck, you can probably figure out what went wrong with our plan. The driver didn't start the truck and allow the brake system to pressurize, so the truck just kept rolling even though he was slamming the brakes. The truck wasn't damaged, and thankfully no one was hurt.

ANONYMOUS

We were lucky—but we also were careless because we were very tired. I was the movement leader, and I allowed safety to take a back seat to mission accomplishment. Even with high operational tempo, we've got to slow down and put safety first. 🚚

Comments regarding this article may be directed to the editor at (334) 255-1218, DSN 558-1218, or by e-mail at julie.shelley@safetycenter.army.mil.

BIG BROTHER VS. B

Army regulations! DA pamphlets! DOD regulations! Standing operating procedures! All these rules to keep me confined in my space! I do them because I don't have a choice, right? This is the Army!

Does this describe how you feel? Let's look at the other side of the coin. Do you flash your lights at oncoming traffic when you know a policeman is waiting a little further down the road? Do you give your sister company a warning call when battalion comes in for inspection, you know, to tell them what they're looking for?

All these "for instances" illustrate the constant battle in our everyday lives, on duty or off, where we as individuals and organizations wrestle with being part of the "band of brothers" versus "big brother." In both cases, big brother is the large entity "out

there" trying to instill order and discipline to keep us safe from each other and ourselves. The band of brothers is "us." At all levels of our lives, whether we are alone in our cars or operating at the various levels of Army organization, we band together to protect each other from big brother's intrusions or repercussions.

I'm sure a human factors professor would describe these behavioral impulses as the "herd" mentality between predator and prey. I would like to extend a simpler explanation. My hope is each side of this equation can see the other's rationale for their actions.

It's Operation Iraqi Freedom III, and we're at the Corps of Engineers' PAD 3, Camp Virginia, Kuwait. Big brother says, "Why do you have all these Texas barriers around your PAD? Can't you see you're building a compound within the wire?" Band of



BAND OF BROTHERS

LTC THOMAS MCDERMOTT

Deputy Director, Future Operations (G5)
U.S. Army Combat Readiness Center

brothers says, "We have to protect our stuff. People are walking through here all night, and we might lose our tools."

Big brother understands because he once was where this lieutenant now stands. The lieutenant is just protecting his stuff and making his Soldiers feel special. But, big brother still must tell the band of brothers what they don't see. They've never seen tents catch fire and watched as 40 burned in minutes. They've never seen how complicated it is to get fire/rescue across a forward operating base or base camp. They've never run between tents and tent ropes with stretchers and lifesaving equipment to reach the Soldier having a heart attack. They simply don't know what they don't know.

Band of brothers takes all this in and says big brother just doesn't get it, or big brother is "old Army" and this is the "new Army." And he's right on both points. Band of brothers is the center of the

bell curve of today's Army. The 18- to 26-year-old Soldiers are the majority of this force and part of the "Y" generation. For you baby boomers, the "Y" means that every time you tell them something, they always ask "Why?"

Both junior and senior leaders—WE—must bring these two differing perspectives to the table. The old-Army types must understand our young Soldiers see a huge difference in perspective of purpose and intent. Band of brothers must see the "old Army" has been there, done that, and doesn't want young Soldiers to experience the hard lessons learned. Experience is the best teacher, but this old saying is true: "Experience teaches slowly and at the cost of mistakes." 🍌

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Lost

AMV

Class A

■ Two Soldiers were killed when their M1114 HMMWV overturned at or on a railroad crossing during a day convoy movement. One of the deceased Soldiers was serving as the vehicle's gunner, and the other deceased Soldier was a passenger. Two other Soldiers were injured.

■ Two Soldiers drowned when their M1114 HMMWV rolled over into a canal. The HMMWV's driver was backing the vehicle near a drainage ditch when the bank suddenly collapsed, overturning the vehicle in the water. The two deceased Soldiers were serving as the HMMWV's driver and truck commander, respectively. Both Soldiers were wearing their seatbelts.

■ Three Soldiers drowned when their M1114 HMMWV overturned into a canal. The vehicle was part of a patrol convoy and veered off the roadway before rolling over into the water. The accident occurred in the early morning.

■ Soldier was killed when his M998 HMMWV collided

with an M1114 HMMWV. The deceased Soldier was driving the M998, and he was ejected from the vehicle and suffered massive head injuries. He was not wearing his seatbelt or helmet. The accident occurred in the early evening.

■ Soldier suffered fatal injuries when the M915 she was driving overturned after colliding with a civilian vehicle on a curve. The Soldier was trapped in the vehicle following the accident, which occurred during the day.

■ Soldier died when the LMTV he was driving struck a barrier and rolled over. The vehicle was part of a day convoy.

Class B

■ Three Soldiers were injured when the M1114 HMMWV they were riding in rolled over. The driver overcorrected the vehicle after hitting a dip in the road, causing the vehicle to overturn. All four occupants, including the driver, were ejected. The passengers suffered head, arm, and pelvic injuries. The driver was not injured. The accident occurred during the day.

■ A 2 1/2-ton truck suffered Class B damage when it flipped over a guardrail



into the opposite lane on a highway. The driver lost control of the truck after swerving to avoid a civilian vehicle. The accident occurred at night, and snow and ice conditions were reported. Neither Soldier in the truck was injured.

Class C

- Soldier suffered a lacerated liver and cuts to her knee when the fuel tanker truck she was riding in rolled over. The Soldier was trapped inside the vehicle after the accident. The driver was not injured. The truck was part of a day convoy.

What Was He Thinking?

Or, more aptly, why wasn't he thinking? A Soldier drove his M915 to the refuel point following a mission. His fuel key didn't work, so he got in the truck, fired it up, and began the drive to get the key. What the Soldier didn't realize, however, was that the fuel pump nozzle was still attached to the M915's gas tank. Fortunately the

Soldiers on post weren't wowed by a bright orange explosion, but the flashing blue and red lights from emergency response vehicles caused quite a stir. The unfortunate Soldier was ordered to attend remedial drivers training, including special instruction on proper fueling procedures. He also got to pay for all damages to the fuel pump.



Personnel Injury

Class A

- Soldier suffered a fatal gunshot wound when the Soldiers at the traffic control point he was manning opened fire on a civilian vehicle. The Soldiers opened fire after the vehicle's driver failed to stop after repeated warnings. The accident occurred at night.

- Soldier died when an explosion occurred inside a bunker. Several Soldiers were placing AT-4s inside the bunker at the time of the explosion. The deceased Soldier was in a storage room when the explosion occurred.

- Soldier suffered a permanent total disability when she slipped from a storage rack while stocking

items in a warehouse. The Soldier was stepping down from the rack onto a forklift when she fell.

Class B

- Soldier's left-hand fingers were amputated when an unidentified piece of ordnance exploded in his hand. No other details were reported.

- Soldier's finger was amputated when it caught on the railing of an LMTV. The Soldier was exiting the rear of the vehicle at the time of the accident. Subsequent surgery failed to reattach the finger.

Class C

- Soldier suffered chemical burns to his eyes while servicing an M988

battery. The Soldier was installing cables to a PLGR mount and removed the battery cap to loosen a nut from the battery terminal. The battery sparked when the Soldier accidentally grounded the terminal with a metal ratchet, and acid shot into his eye. The Soldier, who was not wearing goggles, was expected to recover fully.

Sergeant First Class Paul Ray Smith

MEDAL OF HONOR

I WILL ALWAYS PLEDGE THE MISSION FIRST!

I WILL NEVER ACCEPT DEFEAT

I WILL NEVER QUIT

I WILL NEVER LEAVE A FELLOW COMRADE

"Like every one of the men and women in uniform who have served in Operation Iraqi Freedom, Sergeant Paul Smith was a volunteer. We thank his family for the father, husband, and son and brother who can never be replaced. We recall with appreciation the fellow Soldiers whose lives he saved, and the many more he inspired. And we express our gratitude for a new generation of Americans, every bit as selfless and dedicated to liberty as any that has gone on before—a dedication exemplified by the sacrifice and valor of Sergeant First Class Paul Ray Smith."

President George W. Bush,
White House Ceremony, 4 April 2005