POV FATALITIES

THRU AUG FY 99
107

THRU AUG FY 98
116

In this issue…

20
Years
in Print

SPECIAL RISK MANAGEMENT ISSUE

Features

Investigators' Forum

Gene M. LaCoste

Gene M. LaCoste
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From the Editor

Countermeasure: 20 Years Later and Still Going Strong

This month, Countermeasure celebrates its 20th anniversary. The U.S. Army Safety Program has come a long way since the days when everyone knew there were accidents, but no one really knew how many, what kind, or what to do about them. During those early days, ground accident reports were little more than brief descriptions of what happened; little attention was given to why the accident occurred or how to prevent a recurrence. Yet in the long run, the Army's Safety Program has steadily reduced accidents over the past 20 years. These recent reductions largely are due to greater command involvement in safety.

As the Army enters the new millennium, it must continue to protect its greatest assets— the men and women of today's Army. It must also commit to the conservation of equipment in the face of reducing forces and more limiting budgets.

More than ever before, the Army is dependent upon risk management to attain and sustain a combat-ready force. Toward this end, the Army looks to commanders for leadership in its accident prevention efforts. Every decision and every commitment must be tempered by a continued understanding that safe performance is a primary element of readiness.

In these 20 years, we have made great strides in our efforts to reduce aviation and ground accidents. Our continued goal is mission accomplishment with minimum losses. Risk management requires a total team effort; we can and will be successful if we work together. The rewards certainly are worth our every effort. ♦

SAFETY FIRST!
Paula

Risk Management: Yesterday, Today, and Tomorrow

Military operations, both training and real-world, are inherently dangerous. History reveals clearly that risk is a principle of military operations with severe consequences if not managed effectively. In fact, in recent wars, the Army has suffered more losses due to accidents than from enemy action. So, what has the Army done to reduce such risks?

The 1968 version of FM 100-5, *Operations*, recognized the inherent nature of risk in every mission, yet devoted only one paragraph to it. By 1990, the concept of risk management began to mature when FM 25-101, *Battle Focused Training*, defined the steps of "risk assessment" and indicated that commanders were responsible for performing the assessments. However, only three paragraphs were devoted to the subject, and there were no supporting tactics, techniques, and procedures (TTPs), or institutional training.

In Operation Desert Shield/Storm, the Army again suffered more losses due to accidents (75 percent) and friendly fire (5 percent) than from enemy action (20 percent). Consequently, the Army leadership made a commitment in 1991 to attack this problem by institutionalizing risk management. Five rotations at the maneuver Combat Training Centers were used to develop and test risk management TTPs. Test units achieved significant reductions in ground accident casualty rates (60 percent lower than typical rotations) and incurred only one minor aviation accident. The risk management TTPs are presented in the Center for Army Lessons Learned (CALL) newsletter, Risk Management for Brigades and Battalions: Task Force XXI Update, No. 99-5, April 1999 and available on the CALL (**http://call.army.mil**) and Safety Center (**http://safety.army.mil**) web sites.
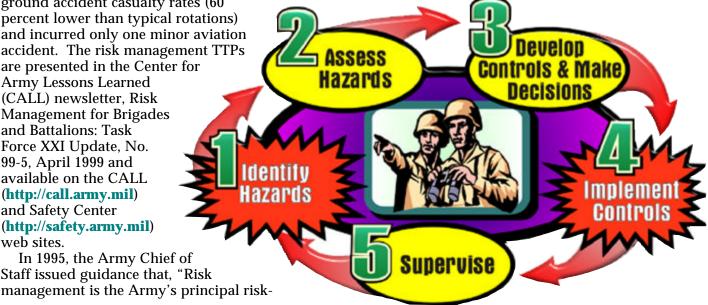
In 1995, the Army Chief of Staff issued guidance that, "Risk management is the Army's principal risk-reduction process to protect the force. Our goal is to make risk management a routine part of planning and executing operational missions." In May 1997, FM 101-5, *Staff Organizations and Operations*, fully integrated risk management into the military decision-making process and provided a detailed appendix on risk management.

Today, risk management is being integrated into the Army schoolhouse from basic training to command and staff courses. In February 1999, the TRADOC Commanding General directed that risk management be integrated throughout all training to provide realistic, mission-oriented applications of risk management. During this training, risk management must be performed to standard as a routine part of mission planning, preparation, and execution. To be successful, tomorrow's soldiers must learn to recognize the hazards they face and adapt their plans to reduce risk to an acceptable level.

By fully integrating risk management into Army operations, the Army has made the commitment to help you be successful. Do your part by making a commitment to implement the TTPs of risk management. ♦

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Next Steps in Continuing Army Safety Improvement

It is an unequivocal fact that a disciplined force trained to standard equals a combat-ready force that conducts the mission safely. Risk management affords us the capability to conduct tough, realistic training and operational missions while minimizing losses due to accidents.

Since the introduction of risk management in 1987, the Army has made tremendous progress in safety. Considering the limited degree of control the Army has over conditions and the environments in which soldiers have to operate, it is one of the safest organizations in the world— but not safe enough. Accidents still take a significant toll on our most precious resources: the sons and daughters of the American people.

No commander wants to lose a soldier or have a soldier or civilian employee injured in an accident. But today, we are an Army operating in uncertain and complex environments around the world, and the hazards to which we have daily exposure are many. The keys to successful operations with minimal losses are command involvement and competent and effective management of risks. Bottom line: risk management allows us to do tough missions in tough environments and do them safely.

When made a routine part of planning and executing operational and training missions, risk management enables soldiers to identify hazards, assess risks, and take steps to reduce risks to an acceptable level. Appropriate actions to effect an Army cultural change that encompasses full integration of risk management into planning and executing missions are well under way. The policy and doctrine to integrate risk management principles and

At the end of the third quarter of this fiscal year, there have been 134 soldiers lost in accidents. For an Army dedicated to fighting and winning our nation's wars, each loss represents a significant impact on combat readiness.

practices into everything the Army does were put in place with the publication of Field Manual 100-14: *Risk Management.* The educational foundation is in place. Classroom instruction is currently provided for precommissioning, squad, platoon, company, and higher level officer, warrant officer, and noncommissioned officer leader courses. Thus, the standard for risk management has been set: leaders at the appropriate level of authority making informed decisions to control hazards or accept risks.

The biggest challenge now is to ensure that the Army is providing hands-on risk management training to soldiers and ensuring that they, in turn, can execute to the standard. In terms of risk management, NCOs are the ones out there "where the rubber meets the road." They are the experts, and it's important to use our Noncommissioned Officer Corps to ensure that risk management is trained, reinforced, and practiced. Soldiers must be evaluated on their ability to manage risks. This can be accomplished through training and performing to standards, expecting excellence, intervention, and discipline where needed.

Instilling risk management into the Army culture and into the mindset of each individual soldier is not an easy, overnight job. It requires dedication, persistence, and caring. But the payoff will be twofold: a safer soldier on duty and a safer soldier off duty. Through positive habit transfer, the risk management skills soldiers learn on duty will also help them become better risk managers during their off-duty activities.

Commanders must be on the front lines in this effort to integrate risk management into training and operations and into the individual behavior of our soldiers. The U.S. Army Safety Center can help. We make many

> **Risk management allows us to do tough missions in tough environments and do them safely.**

risk-management tools available on our public web site (**http://safety.army.mil**) and the restricted Risk Management Integration System web site (**http://rmis .army.mil**) to aid in managing risks. Additionally each year, the Safety Center trains hundreds of military and civilian safety professionals in the latest risk management techniques and integration skills—trained professionals who are invaluable assets in building effective command safety programs. The capstone Army Safety Program regulation, AR 385-10, is also being revised to provide guidance in risk management integration.

A current key focus of the Safety Center is resourcing an expansion of its proactive assistance visits program. At the request of a commander, the Safety Center will deploy a team of subject matter experts, based on the requirements identified by the unit commander, to do an on-site assessment of his or her risk management and command safety programs. This is not an inspection. It is an internal evaluation to be used solely by the commander to improve his or her safety and risk management integration programs. At the same time, it allows the Safety Center team to capture lessons learned and good ideas and programs from the unit and share them with other units and organizations.

Soldiers must remain cognizant of the fact that cultural change is evolutionary, not revolutionary. Complete integration of risk management into the culture of an organization as complex as the Army requires persistence. Enhancing our Army's combat readiness through proactive risk management is worthy of our continued commitment and personal involvement. ♦

—BG Gene M. LaCoste, Director of Army Safety and Commander, U.S. Army Safety Center

Organizational Safety Culture

Implications for Commanders

Despite a long and successful tradition of work into the important relationship between safety and individual aspects of behavior and attitudes, wider organizational factors have only recently been clearly identified as contributing significantly to accident causation. This does not necessarily mean that organizational causes of accidents are a new phenomenon in Army operations; these factors have almost certainly been present since the earliest days of military operations. However, what has changed in recent years has been our thinking about the human origins of accidents. Safety culture is one such concept that explicitly addresses the wider social causes of accidents, and thus represents a significant departure from the traditional approach to safety.

Accidents happen for a number of reasons. Management or supervisory inattention at all levels are the most prevalent accident causes and contribute as much to accidents as the total number of operator and maintenance errors put together. This emphasizes the fact that soldiers often inherit faulty systems directly as a result of decisions made elsewhere up the chain of command.

The concept of safety culture points to a number of ways of understanding and influencing some of the factors that serve to undermine safety. Broadly defined, safety culture is the set of beliefs, norms, attitudes, roles, and social and technical practices within an organization which are concerned with minimizing the exposure of individuals to conditions considered to be dangerous. A safety culture is created as soldiers repeatedly behave in ways that seem to them to be natural, obvious, and unquestionable, and as such serves to minimize risks and improve safety.

Commander's Commitment

The first necessary condition for the development of a safety culture is that responsibility for safety should not reside purely with the soldier, but be a leadership issue as well. Effective safety programs begin at the command level with a strong emphasis on safety that flows through the entire organization. Such command commitment is essential for a number of reasons. It is important because attempts to effect enduring change are unlikely to succeed if commanders are not seen to be closely involved and committed to the initiative. Soldiers will quickly sense where the leadership's true priorities lie and will, more often than not, try to accomplish those priorities despite explicit policy statements. This issue becomes very important when marginal decisions to go or not are required. Thus, strong leadership commitment to safety is critical to support soldiers' decisions made in the face of external pressures brought about by high optempo.

One sign to soldiers of command commitment is the perceived status within the organization of the personnel directly dealing with safety. Also, merely paying lip service for safety transgressions, rather than taking strong corrective action, can bring about a lax safety culture.

Distributed Concern

While the leadership's commitment to safety is necessary, there must be other elements in place for safe operations. The second requirement for the development of a safety culture is for concern about safety to be distributed, supported, and endorsed by all soldiers throughout the organization. Distributed concern for safety needs to be representative of all unit soldiers. Only in this way is it possible to move toward a safe state in which soldiers recognize the necessity and desirability of conforming to both the spirit and letter of safety rules and regulations. Under such circumstances, all soldiers regard the reduction of risk as a personal, as well as a unit goal. Toward this end, formal safety directives should be instituted with more subtle approaches aimed at promoting caring on the part of soldiers and the unit in terms of concern for the personal outcome of dealing with risks, and also for the effects of their activities upon other people.

Rules and Regulations

The specific norms and rules governing safety within the unit will also be at the heart of a safety culture. As guidelines for action, these will shape the perceptions and actions of your soldiers in particular ways, defining what is and is not to be regarded as a significant risk, and what represents appropriate responses to such risks.

In an ideal world, one might attempt to specify a set of complete, up-to-date, and practical contingencies that anticipates all foreseeable risks and hazards. However, there is always stress between the need to handle both hazards that are well defined in advance, and those that are ill-defined or unexpected. Perhaps this is because they arise only infrequently in periods of crisis or because they are completely beyond the boundary of current operational experience. Being alert to both well-defined and ill-defined hazards is a demanding task, since the application of existing rules and standard operating procedures to guard against anticipated hazards might lead to crucial oversights.

Guarding against hazards involves a willingness to monitor ongoing practices in many ways. Leaders must accept uncertainty and the unknown as facts of life. They must exercise creativity and safety imagination as aids in assessing risks and hazards. Finally, they must be prepared both to listen to opinions about risk from all soldiers, as well as to reward rather than ignore or punish those who point out safety deficiencies.

Ongoing Reflection

The final requirement for the development of a safety culture is ongoing reflection about current practices and beliefs. This involves the search for meaning and new knowledge in the face of initial ambiguity and uncertainty about what may prove to be a significant risk or hazard. This process is crucial if a unit is to learn, as well as adapt to changing circumstances. As noted earlier, one function of reflection is to guard against the over-rigid application of existing safety rules, regulations, and procedures.

This reflection is most effective when used by reactive accident investigations, together with proactive incident reporting and feedback. Such open communication links between the leadership and soldiers have been found to be associated with safe organizational climates. This is fostered where units actively avoid laying blame for mistakes and errors. This latter consideration sets special responsibilities, once again, on the leadership for setting the framework within which safety can gain suitable priority.

Conclusion

It will be no simple matter to translate these concepts into practical action. The Army is notoriously resistant to change, and there is no reason to believe it will react any differently in this respect to the concepts of safety culture. Any permanent change will be best addressed through long-term organizational learning on the part of every commander, officer, noncommissioned officer, and enlisted soldier in the Army.

It must be emphasized that safety culture cannot be considered a cure-all to prevent accidents in the face of more pressing issues that undermine safety such as poor infrastructure or lack of resources and personnel. Senior Army leadership is aware of these threats to readiness. Yet, they are also aware of the serious consequences (both direct, such as deaths and injuries, and indirect, such as loss of resources and mission capability) that accompany poor safety.

At the Safety Center, we are launching several initiatives to address concerns and improve safety. In order for these initiatives to be effective, every soldier at every level within the Army must support them. Your emphasis on safety and the establishment of a safety culture within your command is key. **Leader Involvement Saves Lives.** ♦

> **Effective safety programs begin at the command level with a strong emphasis on safety that flows through the entire organization.**

Installation Commanders and Safety Managers:
"Do You REALLY Care?"

How much do you care about safety? How much does it bother you when one of your soldiers gets hurt or dies? Do you ever lie awake at night wishing you could have taken better precautions that would have prevented someone's injuries? When you hear about accidents in other units, do you inquire about what happened and take precautions to ensure that does not happen in your unit? When you receive ground precautionary messages, safety alert messages, or safety of use messages, do you read them and take appropriate steps to ensure the safety of your soldiers? Do you circulate safety publications, such as *Countermeasure*, to your soldiers for them to read?

If you are reading this right now, you are most likely a safety specialist sitting in an installation safety office. What you most likely are not, is one of the 400,000+ Army soldiers who should be reading *Countermeasure*. There are 31,000 issues of *Countermeasure* published each month with 6,200 recipients down to battalion level, many receiving multiple issues. There are even company-sized organizations that receive their own issues. Safety specialists and leaders are responsible for ensuring that the word gets out. Every soldier should have the opportunity to learn from the unfortunate and costly mistakes of others. First hand experience in the case of poor safety can be deadly.
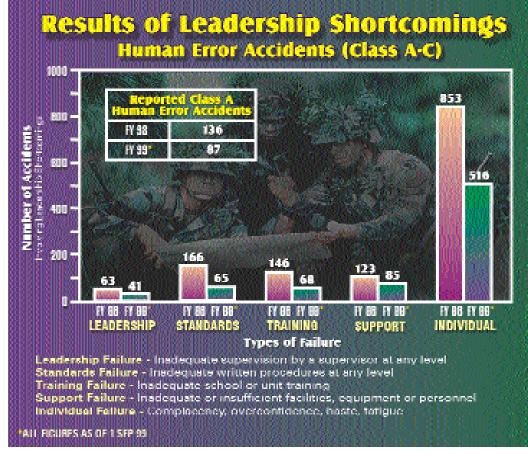
I should know, over the last 2 years I have had the unfortunate duty of having to conduct many accident investigations as a Centralized Accident Investigation (CAI) Board President. I say unfortunate because, although the experience was professionally fulfilling, each investigation was the result of a fatality in an accident that was preventable.

Human error was a direct cause in many of these accidents. Lack of adequate supervision was often a contributing factor. Tragically, over 80 percent of all accidents result from human error.

Leadership Failure

Leadership failure comes in many different forms. The most upsetting, however, are those failures attributable

Results of Leadership Shortcomings
Human Error Accidents (Class A-C)

Number of Accidents (Average Length this Shortcoming)

Reported Class A Human Error Accidents	
FY 98	136
FY 99*	67

LEADERSHIP: FY 98 63, FY 99* 41
STANDARDS: FY 98 166, FY 99* 65
TRAINING: FY 98 146, FY 99* 68
SUPPORT: FY 98 123, FY 99* 85
INDIVIDUAL: FY 98 853, FY 99* 516

Types of Failure

Leadership Failure - Inadequate supervision by a supervisor at any level
Standards Failure - Inadequate written procedures at any level
Training Failure - Inadequate school or unit training
Support Failure - Inadequate or insufficient facilities, equipment or personnel
Individual Failure - Complacency, overconfidence, haste, fatigue

*ALL FIGURES AS OF 1 SEP 99

to complacency and/or apathy. These two characteristics have accounted for many of the soldier fatalities that I have investigated. Although usually not the direct cause, complacency and apathy were instrumental factors nonetheless.

Accidents are preventable at all levels of command. Every soldier is a safety officer—from the youngest private to the Chief of Staff of the Army, anyone can intervene if they believe that unsafe actions are being conducted. Over half of the accidents I have investigated could have been prevented if someone would have spoken up. Effective leaders must learn to recognize and reward the candor of safety-conscious individuals who make "tough calls" for safety's sake.

Installation Safety

Installation safety offices set the tone for all safety issues on each installation. They are a direct reflection of the installation commander's safety program. Their resources, to include facilities and personnel, are a product of the commander's approach to installation safety. The location of their office, number of safety personnel, type/condition of equipment, and authority are command directed.

A commander's commitment to safety is reflected in the perceived status within the organization of personnel dealing directly with safety. The safety offices should be located as close to the commander as physically and operationally possible. The facilities should be state-of-the-art. If we have money to build new state-of-the-art facilities on our installations, then we have enough money to protect the reason for building them—the soldier. The installation commander's safety program should focus on tactical safety, as well as garrison safety (playgrounds, schools, etc.). Tactical safety must not be left to untrained individuals who were designated as unit safety officers in the

> # Lack of adequate supervison was often a contributing factor in most of these accidents.

form of additional duties.

According to AR 385-10, *The Army Safety Program*, "Safety officials will be a member of the commander's special staff and report directly to the commander." Installation safety managers should answer, as a minimum, directly to the installation chief of staff, or even better, the installation commander. They should not have to work up through staffing elements to get safety actions planned, approved, and accomplished. They should be adequately trained and held accountable for coordinating mandatory safety requirements as spelled out in appropriate Army regulations. Finally, safety managers must tell the commander everything, not just what he wants to hear; "yes men" only establish a false sense of security.

Excellent safety offices don't always have the largest budgets. Their success lies in their proactive approach to safety. Many of the best are tied directly to the commander's hip. Unit training plans, unit safety officer courses, safety literature dissemination plans, and safety inspection checklists are but a few of many proactive steps that effective safety offices use in assuring garrison and tactical safety. These offices also manage to find funds to send their safety personnel to school so they can become fully trained safety managers.

Our soldiers deserve the best when it comes to safety. If you are an installation safety manager, stand tall. If you have to, demand that you be given the ability to conduct your duties properly. Demand funds, demand equipment, demand personnel. Step up to the plate and be recognized. Don't let the fatality of a soldier be the first opportunity for you to make a point to your commander. It's not fair to anyone, especially the soldier. ♦

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This article is written by accident investigators to provide major lessons learned from recent centralized accident investigations.

Investigators' Forum

Accidents Kill More Than the Enemy

More soldiers have died as a result of non-battle injuries than in combat. Many of these soldiers were killed by an enemy that doesn't disappear when the fighting is over; neither does it surrender nor lay down its arms. This enemy is accidents. The only defense against accidents is leading soldiers based on standards and enforcing the requirement to perform to standard at all times. By properly supervising soldiers, leaders can protect our soldiers as well as improve unit capabilities. Here's an example of how it should <u>NOT</u> be done...

The platoon received orders to conduct a mounted patrol to a nearby town as part of an ongoing peacekeeping mission. The mission included the requirements to travel from their base camp to the town, spend some time with the local civilian population, and then return back to the base camp. The unit had done many missions like this during their stay.
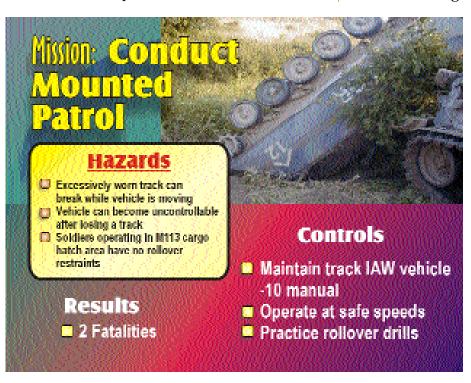
The platoon leadership assigned the mission to one of its squads. An M113A3 Armored Personnel Carrier and a HMMWV were used to conduct the mission. Five soldiers rode in the M113, and the squad leader and his driver followed in the HMMWV.

The mission began with no problems. The squad drove to their first objective and spent about an hour interacting with the local population. They played some games with local children and shared some watermelon with them. Afterward, they remounted their vehicles and began to drive back to their base camp. Three of the soldiers in the M113 occupied positions in the cargo hatch area to provide 360-degree observation and security. The driver and vehicle commander were in their usual positions.

While driving along the road between 30 and 35 miles per hour, the M113 crew felt what they later described as a large bump, similar to that felt when driving into a big pothole. Immediately after this bump, the vehicle began a sharp turn to the left. The driver attempted to correct the vehicle's motion, but his steering and braking attempts were ineffective. After spinning nearly 180 degrees, the M113 left the roadway and entered a ditch. It rolled into the ditch on its right side and

Mission: Conduct Mounted Patrol

Hazards
- Excessively worn track can break while vehicle is moving
- Vehicle can become uncontrollable after losing a track
- Soldiers operating in M113 cargo hatch area have no rollover restraints

Results
- 2 Fatalities

Controls
- Maintain track IAW vehicle -10 manual
- Operate at safe speeds
- Practice rollover drills

came to rest on its top. Two of the soldiers in the cargo hatch area fell completely out of the opening into the ditch and were unhurt. The driver, still in his position, was also unhurt. The vehicle commander and the third soldier in the cargo hatch were pinned beneath the overturned vehicle and suffered fatal injuries.

What went wrong?

The vehicle became uncontrollable due to a snapped track. The track on the M113's right side broke completely, resulting in the loss of the track and a complete loss of steering control. With no track on the right side, the driver's attempts to steer were not effective, and any braking that he did only worsened the vehicle's pull to the left. Examination of the broken track showed that the pin on one block had worn through the metal parts that held it within the adjacent track block. Over time, the metal became weaker until the forces exerted by the pin overcame the metal's ability to hold it in place, and the pin tore completely free from the adjacent shoe.

The M113 crew's pre-mission PMCS did not identify the numerous unserviceable track blocks on both sides of the vehicle and the unserviceable track adjuster on the right side. A post-accident examination of the vehicle showed a very deep gouge in the hull on the M113's right rear, indicating a history of improper track tension on that side. The wear patterns on the failed track shoes also showed a long-term pattern of metal-on-metal wear after the failure of the track bushings.

Lessons learned

A properly conducted PMCS should have identified these deficiencies. The M113 driver had the necessary tools and manuals to identify the problems; however, he gave only a general impression of overall track wear to the platoon's leadership and failed to note the seriousness of the problem. The platoon's leadership did not ensure that the PMCS was performed properly and did not catch these problems through any sort of quality control or pre-mission inspection. The unit had a perception that all their vehicles had seriously-worn track, but they did not quantify the problem nor did they notify the company commander or XO. As a result, replacement track was not ordered with a high priority, and this vehicle departed on the mission with an unsafe condition.

If the company commander had known of this vehicle's dangerously worn track, he could have taken control measures to reduce the risk of its use on the mission. DA PAM 738-750 outlines the "circle-x" procedure available to commanders in this situation. The commander can allow the crew to use the vehicle by imposing control measures that, in his judgment, mitigate the risks to an acceptable level. Examples of control measures applicable in this case include imposing a maximum speed limit or requiring frequent halts for track checks. Additionally, simply cross-leveling track between this vehicle and another one could have eliminated this risk.

The M113 was traveling faster than the authorized speed limit at the time of the accident. The theater-imposed maximum speed limit for a tracked vehicle on this type of road was 25 miles per hour. The newly published speed limit was also 25 miles per hour. The driver did not know these limits, and neither the vehicle commander nor the squad leader traveling behind him took any action to make him slow down. Excessive speed contributed to the track failure and to the rate of turn of the M113, which resulted in rollover.

Summary

Although this accident was caused by a materiel failure, it could have possibly been prevented by leader actions to develop and control risks in the planning through execution stages of the operation. Leaders at all levels need to properly supervise their soldiers to ensure that all operations are conducted to standard. By routinely enforcing standards, leaders can improve the capabilities of their units and help protect our soldiers. **Leaders can make a difference!** ◆

You Make the Call

"You Make the Call" is a regular feature in Countermeasure. The purpose is to educate, to stimulate thought, and exchange information that will expand understanding and application of risk management in training and operational environments. All you have to do is read the synopsis below and write down what you consider to be the best way to handle the situation. Send your answers to U.S. Army Safety Center, Bldg. 4905, 5th Ave., ATTN: Countermeasure, Fort Rucker, AL 36362-5363, e-mail countermeasure@safety-emh1.army.mil or fax 334-255-9528. We'll select the best answers from those submitted and the winner will receive a Safety Center coin and a letter of congratulations from the Director of Army Safety. All winning entries will be published in a future issue.

You are a battery commander in a mechanized 3x8, M109A6, field artillery battalion. You are in day 8 of a 14-day external evaluation (EXEVAL). The time is 2000 and you have just received a fragmentary order (FRAGO) to displace to a new firing location and be in-position-ready-to-fire (IPRTF) no later than 0600 the next morning. The battery has been firing since 0600 that morning and is operating on six hours of sleep.

The next firing position is approximately 30km away and the route to that location includes paved and unpaved roads. Your battery has not had their evening meal, but you have MREs and hot "T-rations" available. All vehicles in the battery are getting low on fuel and you will need to conduct a "hot refuel" en route.

Your executive officer has determined that it will take about three hours to move to the next location based on the route you have suggested.

What should you do? Should you: (1) March-order and depart for the next location and get some sleep before 0600? Or, (2) Eat chow, bed down, then get up and depart for the next position at 0300? What would your actions be prior to conducting any of these options? What are the safety implications associated with each? **You make the call.** ♦

Safety Alert Notice

In a series of recent accidents, U.S. Army Safety Center investigators have noted an increase in leaders failing to enforce standards defined in unit SOPs, gunnery manuals, or operator manuals. Identified acts of noncompliance include supervisors allowing operations with untrained/uncertified crews or fewer crewmen than required.

For weapon systems to function as designed, crews must be trained. For reasons such as personnel turbulence, short-notice deployments, or simply a lack of assigned crewmen, units sometimes find themselves without enough trained, qualified, and certified crews to operate all assigned systems. Unqualified crews and reduced-personnel crews cannot accomplish every task to the standards defined in the system operator's or gunnery manuals. Shortcuts can lead to errors, which often result in death, personnel injury, and/or equipment damage.

Commanders are required to certify that all crews are proficient in mandatory tasks for all major weapons systems prior to the execution of live-fire gunnery. Before authorizing a deviation from established procedures or standards, commanders must first determine if the benefits of executing the mission outside of published procedures or standards outweigh the risks involved. If so, hazards associated with the deviation must be identified. Control measures to mitigate the associated risks then must be developed and implemented. Finally, commanders must decide that the training benefit of continuing the mission with these controls in place outweighs the residual risks. In all cases, commanders and leaders must provide the supervision necessary to ensure that sound risk management decisions are made and then enforce those identified control measures. ♦

—BG Gene M. LaCoste, Director of Army Safety