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## Reducing Abrams Tank Fires Starts with Training and Leadership

The frequency of tank fires has increased in the past several years, and more significantly, three tankers died during training as a result of tank fires in 2002. It's time again for Armor Force leaders to ensure we are doing all we can to prevent tank fires. The solution to this problem must be a team effort of leader and soldier action combined with materiel fixes. Our partnership between the Armor Force, the Armor Center, the Program Manager for Abrams tanks, and the U.S. Army Safety Center will ensure tank crews have confidence in the safety and reliability of the best tank in the world.

As I have said before, the Abrams tank is an equal opportunity killer. While it has proven combat lethality, the Abrams has claimed the lives of 26 Armor crewmen in fatal accidents between 1982 and 2002. While there are hundreds of potential reasons for tank fires, which have substantially damaged the tanks, only two types of tank fires kill tankers — ammunition fires and nuclear, biological, and chemical (NBC) filter fires. Five tankers have died in ammunition fires and two tank drivers have died in NBC filter fires.

We all know our training is tough and performed under realistic conditions, but one soldier's life lost to a tank fire is too many, especially when most accidents can be prevented. I want to review what our responsibilities are as leaders and as tank crews to drop this fatality statistic down to zero.

The two most important things that can be done to prevent tank fires is preventative maintenance and training.

Units must use tank technical manuals to conduct any and all maintenance. They must adhere to their PMCS inspections and their nonmission capable criteria. Training will help prevent ammunition fires, which includes ammunition fire hazard awareness, ammunition inspection, handling, and storage, and proper main gun loading, clearing, and misfire procedures. Training that will help prevent NBC filter fires is NBC system operation and fire hazard awareness, PMCS checks of the NBC main system, correct operation of the NBC main system, and proper servicing of the NBC system.

The Armor Center remains engaged, with the TRADOC System Manager (TSM) Abrams as our lead. TSM Abrams is continually updating armor technical manuals and serves as a user representative with the Abrams Program Manager (PM). I have also tasked the Armor School Command Sergeant Major, James Dale, to work with TSM Abrams, 16th Cavalry Regiment, and Abrams PM to develop and document a single standard crew fire evacuation drill that enforces a time standard. This drill performed to standard will help ensure the survival of tankers when fires do occur. We distributed a compact disk (CD) titled, "Abrams Crew Emergency Evacuation Procedures," to the force during October 2002 — look for it. If a fire does occur in your tank, the safe evacuation of your entire crew is first mission — then worry about shutting down the tank engine and extinguishing the fire. Tank crews must rehearse this drill regularly. Commanders and master gunners must integrate this crew evac-

uation drill into all gunnery and maneuver training. I feel so strongly about this that I have already decided to make crew evacuation a testable crew task in the Tank Crew Gunnery Skills Test.

Another risk-reduction measure that Armor leaders and crews must perform to standard is properly wearing complete NOMEX personal protective equipment. Failure to enforce wearing gloves, body armor, and the balaclava were contributing factors that increased the severity of injuries and even the death of soldiers involved in Abrams fires. We owe it to our soldiers to enforce these uniform standards. It is a measure we can control to reduce the risk, or at least minimize the severity, of injury during tank fires.

The Armor Center shares this burden with you. We are developing systems and techniques, including materiel fixes, in concert with Abrams PM that will help lower the incidence of M1 tank fires and reduce risk to crews. We are adding an audible alarm to alert the full crew of NBC main system failure to the M1A1 through a modification work order. All Abrams tanks will be equipped with an automatic shutoff capability that will activate and turn off the NBC main system 2 minutes after warnings are triggered and before a filter fire can occur. We are also modifying the mounting system for the driver night vision viewer to allow rapid egress out through the driver's hatch. Stainless steel hardware is the new standard for bolts that retain many of the NBC system components that are subject to corrosion. New air

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cycle machine bearings have been developed and will improve the robustness of the system. However, with any materiel solution, it takes time to implement, but we will not let these fixes drop.

In addition to materiel changes to the NBC main system, we also need to change the actual practice of how the field uses and maintains the NBC main system. A Safety-of-Use message recently issued to the field required a 100 percent service to all Abrams NBC Systems. The services completed since August 2002 have revealed that some units are not adequately conducting PMCS and services, and that our service procedures can be improved. The "old Sarge" tells us that if you use the system — you will have a fire. As a result, many units discourage using the NBC main system. Lack of use contrib-

utes to lack of attention during PMCS and services. This practice contributes to low soldier confidence in the NBC main system. Some junior leaders no longer know what looks or sounds right regarding NBC main system use and maintenance. The operator's before operations checks remain the best indicator of NBC main system performance. Daily PMCS of the NBC main system, including running it for 10 minutes, actually helps the system self clean by expelling dirt and water that may have entered the NBC sponson. Commanders must ensure their soldiers are aware of NBC system hazards, are trained in the operation and maintenance of the NBC main system, and that they inspect their NBC systems during services to see what they look like and how they are maintained. Along with Abrams PM, we are evaluating additional service tasks that include removing and clean-

ing several key components, including the heat exchanger and pre-cooler, and inspecting the air cycle machine. Commanders then need to ensure that the NBC main system operation is conducted as part of training.

We are not forgetting the institutional training piece — we are assessing how our instruction for officer, noncommissioned officer, tanker, and tank systems maintainer courses contributes to preventing NBC filter fires. Keep in mind that all this investment is no substitute for attention to detail when conducting training and PMCS — maintenance is key! I am confident that the team effort of the Armor Force, the Armor Center, and our Program Manager can reduce tank fire fatalities, injuries, and equipment damage. We owe it to our soldiers to get this right — right now.

**FORGE THE THUNDERBOLT!**