

Maintenance Under Fire

by Captain J.M. Pierre

"Black 6, this is Blue 1...Slant 3. A32 is a mobility kill vicinity November-Kilo 449121...Break...Black 7, request vehicle evacuation."

"Roger, Wrench is en route."

When the mechanics went to recover the "disabled" tank, they thought their mission was routine: get to the vehicle, simulate the hook-up, and tow A32 to the maintenance collection point. It was a typical operation, conducted several times in this and other training events. There was no big hubbub made as the M88 lumbered across the rolling terrain. Then the opposing force (OPFOR) appeared — a three-man ambush. The mechanics' eyes widened. They halted in the center of the "enemy" kill zone. It was an indecisive moment for the team mechanics fumbling with their .50 caliber machine gun. Thirty seconds later, in response to a constant stream of "enemy" fire, the company/team's mechanics fired back. Their return fire was late; it was intermittent at best. The OPFOR had the upper hand and they held their ground. Then they were gone.

At the vehicle recovery site, thinking the threat had vanished, the mechanics casually walked to A32. Black 7 had evacuated the crewmen. The area looked safe:

"Okay, let's get this thing out of here," the shop foreman said right before he walked into a booby trap. Remember that OPFOR ambush team? They returned with more ammunition. Fully uploaded, they wanted to fight again. This was not a "typical" vehicle recovery — you know, the kind of staged event where Combat Service Support (CSS) assets have an uncontested reign over the conquered battlefield. This mission had a live, thinking opposing force that was dedicated to disrupting their efforts. It forced them to fight as hard as the company/team they supported, and therein it demonstrated a weakness of the maintenance team: self-defense. The mechanics became proficient in the technical tasks of vehicle retrieval, their everyday job — recovery, equipment repair, and main-



An M88 crewman engages targets during live fire, overseen by a safety monitor.

tenance estimates. But they were unable to execute the tactical tasks necessary for self-defense.

The battle ends leaving one side the victor, the other wondering what went wrong, and both sides licking their wounds as they reconstitute for the next engagement. It is in this quiet moment that the dedicated maintenance team shines. The heavy force, bound as we are to our tanks and Bradleys, are likewise tethered to those maintenance fellows who feverishly regenerate our vehicular combat power. It is in this lull that the mechanics must ostensibly become riflemen, retrieving disabled vehicles from the field.

On the face of it, training mechanics as riflemen seems like a low priority collective training event. It appears to take resources away from infantrymen, tankers, and scouts while distracting mechanics from their priorities: repair and recovery. However, when one M88 and its contingent of 63Ts are committed to the recovery of 14 combat systems and three M88s exist in the maneuver battalion, the OPFOR's disruption of recovery efforts directly impacts the ability of the company/team and the battalion task force to regenerate combat power for future operations. The solution is to train long-forgotten soldier skills and to focus training on self-defense on the battlefield.

During the 1998-1999 training year, Headquarters Company, 2nd Battalion, 9th Infantry (Mechanized) trained vehi-

cle evacuation as an isolated lane designed to support its battalion and company essential task: "**Sustain.**" By Battlefield Operating Systems, HHC, 2-9 IN (M) focused its training program as shown in Figure 1.

Maintenance Live Fire was conducted in four phases and per *FM 20-22, ARTEP 7-94 MTP, and ARTEP 17-236-10 MTP*. The greatest emphasis went to those tasks involving tactical movement and establishing a hasty defense at the recovery site. The second priority was a safe recovery of the vehicle per *FM 20-22*. Finally, the training program stressed moving tactically and recovering safely under several adverse conditions replicating the "fog of war," including NBC, EPWs, booby traps, and the ever-present opposing force.

Phase I was the orientation and rehearsal (rock drill and dry run) portion of the training. Phase II (blank fire) introduced soldiers to moving and shooting as part of their recovery. Phase III (NBC fire and validation) reinforced the training of the previous iterations under more intense conditions. Success in this phase validated the maintenance teams to proceed to Phase IV (maintenance live fire), the most exciting and dangerous portion of the training. After the soldiers became familiar with the process of reacting to an enemy, live fire developed confidence in their ability to kill the enemy. Soldiers learned to ask three questions:

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- 1) Am I prepared to defend myself?
 - 2) Is the area and vehicle secured?
 - 3) Have I properly estimated the rig and load?

SCENARIO

The lane begins in the midst of a company/team offensive mission (See scenario diagram on Page 47). The maintenance team monitors the company/team net in an “attack position.” Under simulated combat conditions, a tracked vehicle is immobilized by hostile fire. On order, the maintenance team conducts a tactical movement to the recovery site, establishes security, conducts a battle damage estimate, calculates the resistance needed to move the load, and returns the disabled vehicle to the maintenance collection point without further damage to the vehicle or injury to soldiers (“Tow disabled track vehicle,” Task Number 17-4-1292, ARTEP 17-236-10 MTP).

PLANNING

Maintenance live fire was programmed as part of the 2-9 IN (M) yearly gunnery training. HHC coordinated for the Warrior Valley range, the ammunition requirements, and rotated its maintenance teams with the recovery section to replace the loss to the companies. The HHC commander was the primary trainer and maneuver evaluator. The battalion maintenance technician (BMT) was the technical trainer and recovery evaluator. Soldiers were tasked to serve as the range OIC, NCOIC, ammunition NCO, and range safety/controllers. Finally, medics followed as part of the recovery effort, both to provide medical coverage and to train their task of medical evacuation.

In the planning phase, HHC, 2-9 IN (M) conducted a leader’s reconnaissance of the Warrior Valley Range at the Korea Training Center. The range OIC, BMT, and battalion maintenance sergeant (BMS) gained an understanding of the terrain by walking the range and talking about the actions of each soldier during the different phases of the training. They refined the scenario based on the range restrictions, safety

MANEUVER TASKS	
Occupy Assembly Area	7-2-1317
Perform Tactical Road March	7-2-1301
Hasty Occupation of a Battle Position	17-3-2601
Conduct Tactical Movement	17-3-1016
Execute Actions On Contact	17-3-1021
Disengage from the Enemy	17-3-2380
Defend Against Ambush/Road Not Blocked	17-3-1059
FIRE SUPPORT TASKS	
Employ Fire Support	7-3-1320
INTELLIGENCE TASKS	
Practice Communication and Electronic Security	7-3-1406
MOBILITY/SURVIVABILITY TASKS	
React to Chemical Attack	7-2-1318
Perform Hasty Decontamination	7-3-1301
Cross Contaminated Area	7-2-1315
Employ Camouflage	7-3-1309
Operate in NBC Environment	7-3-1318
Treat NBC-Contaminated Casualties	7-3-1602
AIR DEFENSE TASKS	
Defend Against Air Attack (Passive)	7-2-1312
COMBAT SERVICE SUPPORT TASKS	
Destroy Unit Vehicle and Equipment	7-3-1311
Perform Maintenance Operations	7-3-1316
Evacuate Casualties	7-3-1613
Provide Maintenance Operations	7-3-1703
Control Maintenance Operations	7-3-1704
Establish Unit Maintenance Collection Point	7-3-1705
Provide Class IX Support	7-3-1707
Perform Recovery of Vehicle and Equipment	7-3-1708
Perform Battle Damage Assessment and Recovery	7-3-1711
COMMAND AND CONTROL TASKS	
Consolidate/Reorganize	7-3-1302
Prepare For Combat	7-3-1305
Sustain	7-3-1306
Establish Communication	7-3-1307
Control Support Operations	7-3-1514
Perform Continuous Operations	7-3-1315
Recover a Mired Vehicle	17-4-1295
Select and Establish UMCP or Field Maintenance Sites	17-3-1266
Perform Battle Damage Assessment	17-3-1279
Repair Unit Equipment	17-3-1280

Figure 1

considerations, and troop proficiency. As surface danger zones (SDZ) of the range varied within its depth, they also ensured the range supported the ammunition used. Finally, they validated and modified the scenario with Range Control personnel. In the end, the leaders of HHC, 2-9th IN walked away with a common vision of the firing lines and the target arrays.

PREPARATION

Soldiers started their preparation for maintenance live fire three months prior to the event. As mission support prevents the mechanics from conducting dedicated everyday training, NCOs took advantage of the weekly Sergeants Time to train those individual tasks that supported the collective tasks above:

land navigation, radio procedures, driver training and boom operation, and weapons qualification. A current weapons qualification was also mandatory for the live fire. Unqualified mechanics would be permitted to participate in the training but could not shoot ball ammunition.

EXECUTION

During Phase I - Dry Run soldiers were briefed on the scenario and provided the task and purpose of the training by the OIC. This was followed by a rock drill and training on individual movement techniques (IMT). The training objective was the repetition of reaction tasks as they were to be performed during the live fire.

After the practice, soldiers conducted a mounted dry run of the lane. The M88 reacted to an ambush by ‘engaging’ targets as the team chief reported to higher. At the recovery site, a team of four mechanics dismounted the M113 and conducted a local reconnaissance of the area. They established security along the main avenue of approach and directed the rest of the maintenance team to continue with the recovery mission. When targets appeared, they engaged from the prone position to defend the recovery effort.

During the mounted portion, target acquisition was the biggest problem. During the dismounted portion, soldiers had to relearn individual and buddy movement. They had to also learn how to establish a firing line. Soldiers tended to mask each other’s fires, silhouette themselves, or establish poor firing positions. Again, repetition of IMT and reaction skills was crucial in this phase and proficiency was a criterion for moving to the blank fire training phase.

In Phase II, blank fire, the same actions were conducted with the addition of blank ammunition, artillery simulators, and trip flare booby traps. In this iteration, soldiers learned to execute their mission with the din of “battlefield noise.”

During the mounted portion, the .50 caliber gunner usually had trouble firing his machine gun from the top of the M88 — a perishable skill that they rarely trained. During the dismounted

COMBAT SERVICE SUPPORT TASKS	
Prepare and Evacuate Casualties	7-2-1314
Evacuate KIA Remains	7-3-1509
Treat Casualties	7-3-1601
Treat/Secure/Evacuate Enemy Prisoners of War	7-3-1608
Perform Triage	7-3-1609
Develop/Supervise Medical Support	7-3-1611
Establish Medical Platoon Area of Operation	7-3-1612
Evacuate Casualties	7-3-1613

Figure 2

portion, the team chiefs found that they had trouble with command and control of both the security force and the recovery when the gunfire started. This was overcome by having the shop foreman direct the security section as the team chief directed the recovery effort. Now leaders were present at two crucial areas and the team chief was near the radio in order to request indirect fire.

Soldiers also discovered they had to move tactically through an inhospitable terrain in order to find cover from “enemy” fire while maintaining their fire line. Again, repetition during the dry run was essential for teaching them how to move. Trainers emphasized 3- to 5-second rushes and communication with all members of the dismounted security team as they established their firing line.

With more skills to retrain in order to safely progress to a live fire, the blank fire was conducted twice. Time constraints prevented full speed runs so, as a minimum, crucial events were rehearsed as much as possible.

The most demanding iteration was Phase III, the NBC fire and validation. The skills developed in blank fire were reinforced in MOPP IV. The ability to successfully and safely drive off-road, conduct recovery tasks, engage targets, and command and control while impaired by a protective mask and gloves validated the teams for the live fire run.

During Phase IV, safeties certified that soldiers could properly dismount their vehicles, conduct movement to the firing line, and shoot. On the M88, its safety certified that the gunner could successfully load his .50 caliber machine gun, shoot, and clear it.

Mechanics were decertified if they failed to point their weapons at the ground during IMT, failed to keep their weapons on safe, or failed to point up and down range on the firing line. An

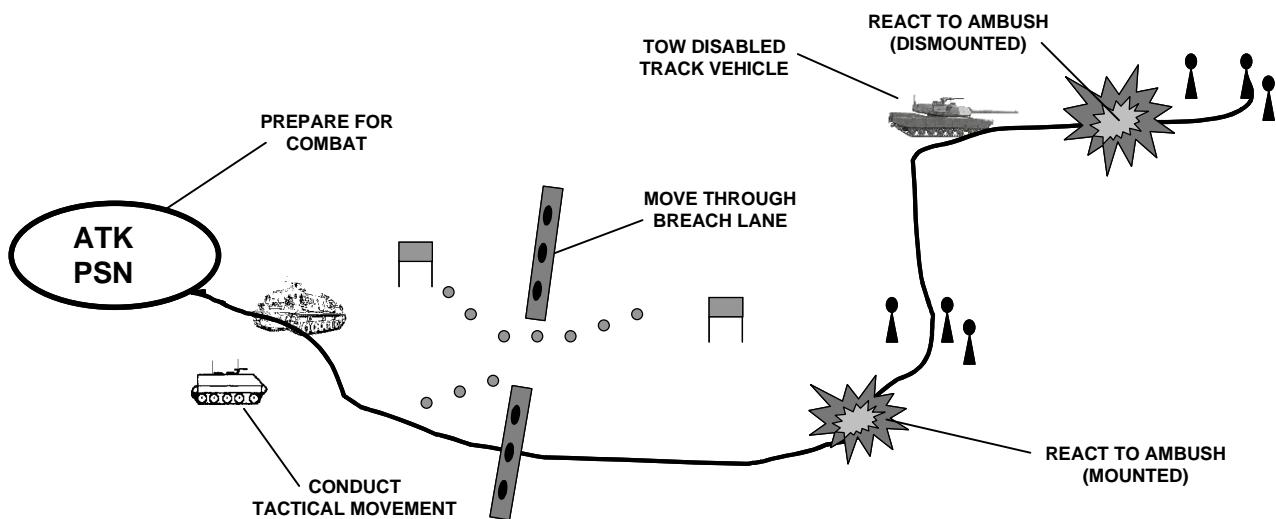
accidental discharge of a weapon was a cause of immediate decertification.

Training Aids

Training aids enhance training when they create the “effects of the battlefield.” For example:

- A breach lane was built through a wire/mine obstacle. The breach was intentionally placed off the main flow of traffic in order to train teams to identify and move through the single lane breach.
- Trip flares and whistling devices were used as booby traps — these forced soldiers to thoroughly search vehicles.
- Target lift devices with E-type silhouettes were primarily used. An operator with the remote control device walked the lane and lifted targets on command. This reduced target confusion as the maintenance teams moved through the range.
- Where lift devices could not be placed, E-type silhouettes were suspended at a 45-degree angle by cord and a balloon. Shooting the balloon caused the target to fall. This worked exceptionally well for training individual marksmanship, fire control, and fire distribution.
- Uniforms on the targets further created the effect of a real enemy presenting himself.
- Video cameras recorded every action to allow us to dissect our TTPs (tactics, techniques, and procedures) at the AAR (after-action review). Soldiers learned more quickly when they saw themselves making mistakes.
- Medical teams were the most significant addition to the maintenance lane. They conducted medical-related training that supported our essential task, SUSTAIN. We focused on the tasks listed in Figure 2.

Maintenance Live Fire Scenario



Conclusion

At the end of maneuver training a voice comes over the command net: "ENDEX...ENDEX...ENDEX...move to the AAR site." The objective has just been seized. Maybe platoons have finished consolidating, but the support assets have not moved to clear the battlefield. This fails to integrate CSS into the overall training exercise. It, therefore, fails to enforce basic soldier skills, such as security, tactical movement, and marksmanship, while teaching that vehicle retrieval is administrative — never conducted under the weapon sights of the OPFOR. A simple vehicle recovery may then result in

untrained supporters involved in a direct firefight.

So, as the company/team consolidates on its objective, possibly having left some "enemy" dismount alive, are the soldiers ready to return fire? Is security around the vehicle established? Are there booby traps around the vehicle? What amount of effort is required to secure the site while retaining enough manpower for the mission?

Isolated CSS training events, such as the maintenance live fire, specifically address weaknesses in the forgotten components of the company/teams by training them to competently answer

these questions. It builds confidence in maintenance teams, and in individual soldiers, assuring them that they can accomplish their mission no matter where the OPFOR may appear.

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At left, local security is set up to protect mechanics during a recovery. Above, medics train by evacuating a "casualty".