Enhancing rocket artillery certification with the trainer pod

By Capt. Brennan Deveraux

Upon witnessing the destructive power of rocket artillery during Operation Desert Storm, British artillery battalion commander Lt. Col. Peter Williams commented “It is the decisive battle winner. We call ourselves the Grid Square Removal System because the rockets from each launcher can take out a square kilometer of the map.”

These systems have since evolved to incorporate guided munitions. The invention of the Guided Multiple Launch Rocket System (GMLRS) allows rocket artillery units to process missions in support of both area and precision effects. There are currently two ways for a firing battery to train rocket artillery missions: a live-fire mission with the Reduced-Range Practice Rocket (RRPR) and a simulation mission utilizing the M68 Launch Pod Assembly Trainer (Trainer Pod).

Qualification of a rocket artillery section requires the crew to process fire missions utilizing the RRPR for training purposes. The Trainer Pod is incorporated into the certification process, however it is only used to rehearse the RRPR missions in preparation for qualification. The problem the artillery community faces is that the RRPR is a training tool that does not incorporate tactics, techniques and procedures (TTPs) for precision rockets. Employment of GMLRS is unique and cannot be replicated with a RRPR. To increase the readiness and lethality of rocket artillery sections, the Fires Center of Excellence must modify the certification tables that utilize the Trainer Pod to ensure all rocket artillery units are trained to employ precision munitions.

The foundation for this argument is based on my personal experience as the M142 High Mobility Artillery Rocket System (HIMARS) liaison officer for the Combined Joint Operations Center - Baghdad Strike Cell in support of Operation Inherent Resolve (OIR), and the lessons learned from the train up and execution of the battery and battalion exercise evaluations of Bravo Battery, 1st Battalion, 94th Field Artillery Regiment. These experiences have made it apparent that gaps exist between conducting rocket artillery training missions compared to the way missions are actually fired in combat. This article examines the differences between firing RRPRs and precision munitions, outlines the capabilities of the Trainer Pod, and proposes additions that must be incorporated into the certification process for rocket artillery units.

RRPR vs. precision munitions

The difference in the execution of missions between the RRPR and precision munitions goes beyond guidance systems. The RRPR is designed to simulate conventional rockets which follow ballistic principles. The accuracy of these types of rockets can be improved with the calculation...
of meteorological data (MET) and require validation of safety when used in a training environment. When firing RRPRs, the fire direction center (FDC) has limited options to distinguish one mission from another outside of basic methods of control. There are no options to adjust the fuze of the RRPR or its trajectory. Conventional munitions are fired off the side of the cab forcing the launcher to occupy perpendicular to the azimuth of fire (AOF) to process the mission.

Precision munitions are both simpler and more complex than their training counterpart. These munitions utilize an inertial navigation system and are global positioning system (GPS) aided. The FDC does not need to compute MET or plan for safety; the grid input into the rocket is the grid the rocket will hit. However, these munitions force the FDC to conduct specific mission processing to ensure desired effects are achieved. The Multiple Precision-Aim Point Mission (MPAM) is a mission type in which a single launcher fires numerous rockets with each individual rocket targeting a designated grid coordinate. The rockets fire within three to five seconds of each other allowing the supported unit to determine the order in which specific aim points are hit. Beyond deadly accuracy, the FDC must worry about both the trajectory upon impact and the fuzing of each rocket. Each rocket can be selected to impact on either a nominal ballistic type trajectory or a vertical near straight down trajectory. The capabilities of the GMLRS M31A1 rocket type give the supported unit ample options for obtaining exactly what is requested. It has five distinct fuzing options with varying effects, and multiple fuzes can be selected in support of an MPAM. The launchers also fire precision munitions differently than conventional rockets. All precision munitions are fired directly over the cab, forcing the launcher to lay on the AOF. The crew must also attach a cable and validate GPS keys to allow the launcher to process precision missions. The RRPR is designed to simulate the launch of conventional non-guided rockets. To maintain proficiency in processing a precision fire mission, rocket artillery units must utilize the Trainer Pod.

**Launch Pod Assembly Trainer: The Trainer Pod**

The Trainer Pod is unique to rocket artillery. It is not a simulation center where Soldiers go to train, but an addition to the launchers themselves. Crews have the ability to load the Trainer Pod on the launcher, as if it was live ammunition, and train with it in the field. With the correct programming, it can simulate a multitude of scenarios to facilitate numerous training objectives. The Army Training Publication for rocket artillery, ATP 3-09.60, states that the Trainer Pod “...assists in providing realistic training to the MLRS/HIMARS crews. The training tasks include fire mission execution, reaction to munitions malfunctions and reload operations.” The Trainer Pod offers units an opportunity to tailor training to specific mission sets and ensure that the launchers and FDC element are ready for any task required in combat.

The Trainer Pod is capable of simulating precision missions. “It is about as close as we can get to practicing for missions requiring GMLRS...” said Sgt. Patrick Feeley, a HIMARS launcher chief who deployed to Iraq with 1-94th FAR. While discussing pre-deployment training he went on to say that the Trainer Pod “...is capable of helping us train for all situations. With the proper code configured in the pod, we can shoot regular fire missions, or codes can be set to force a hang-fire, misfire or weapon malfunction to occur.” The Trainer Pod allows units to effectively focus training on real-world missions and issues artillerymen will see in combat, including both fuzing variations and MPAMs.

The financial requirements of training a modern military force are daunting. Training events can range from thousands to millions of dollars depending on the scale of the exercise, and the type of unit. Creating additions to the certification tables utilizing the Trainer Pod does not require an increase in allocated munitions and would have no increase in the financial costs of training rocket artillery units. There is also no burden of fielding new equipment, as the Trainer Pod is already with every launcher. Every rocket artillery unit has the ability to incorporate the Trainer Pod into unit training beyond just rehearsing RRPR missions for certification. This is done through weekly digital sustainment training (DST), sergeant’s time training (STT), and the execution of fire plans in support of a field training exercise. If the Army expects these units to deploy and be proficient in the TTPs of precision munitions, then additions must be made to the certification tables utilizing the Trainer Pod.

**The tables**

Many things can be added to artillery certification tables to enhance the quality of readiness for artillery units. However, none of these additions are as vital as adding tables which stress the uniqueness of precision rocket artillery. Cannon units are not required to work through all mission sets as part of qualification, but training opportunities with fire supporters and brigade combined arms live-fire exercises ensure that cannon units are able to execute these missions with live rounds. Examples of this include coordinated illumination and immediate smoke, both of which are part of fire support qualification tables. On the other hand, rocket artillery units almost exclusively fire RRPRs, with many Soldiers going their entire career without firing a GMLRS or an Army Tactical Missile System (ATACMS). When discussing certification tables, Staff Sgt. Evan Fowler, a fire direction NCO in B/1-94th FAR, said, “I believe MLRS qualification...”
tion tables are missing key elements to how we would deploy and process fire missions in a real-life combat environment. They are overly focused on constructing a safety-T and incorporating MET. I would like to see us add to our tables to incorporate more realistic fire mission processing procedures.” For most Soldiers, the first time these munitions are fired live is going to be in combat. To ensure unit proficiency, the certification tables using the Trainer Pod must focus on three things: 1. ATACMS fire missions, 2. multi-fuze MPAMs and 3. misfire procedures.

ATACMS are the strategic arm of the artillery. Planners at all levels incorporate ATACMS when the asset is available. The range of the missile makes it a common munition for echelon above brigade exercises such as Warfighter and multi-national exercises such as Yama Sakura and Ulchi Freedom Guardian. There is no requirement for Soldiers to train on processing ATACMS. The incorporation of ATACMS in the certification process forces FDC Soldiers to gain an appreciation of the extended range of the missile, as well as the dramatic disparity between the variations. A M39 variant has a maximum range of around 165 kilometers and drops hundreds of bomblets, while a M57 type can range nearly 300 kilometers as a unitary warhead. Similar to GMLRS, there are small adjustments that have to be made by launcher crews to support ATACMS missions. Adding the ATACMS certification table utilizing the Trainer Pod will greatly increase the readiness of rocket artillery units to support deep shaping fires.

Thousands of GMLRS have been fired since 2014 in support of OIR and most targets shared a common theme, missions were processed as MPAMs, allowing planners and supported units to control exactly where each rocket would impact. This is not something built into any certification process, and many units faced similar challenges as they began executing these types of missions in combat. When discussing pre-deployment training which would have better prepared them for their mission in Iraq, Staff Sgt. Derrick Dasalla, a HIMARS launcher chief in 1-94th FAR, said, “One of the greatest struggles through the beginning of this deployment has been troubleshooting how the FDC and HIMARS systems work together with regard to MPAMs.”

Urban missions supported with GMLRS often require MPAMs to utilize numerous fuze types to minimize collateral damage and exploit the effects of the first impact. The RRPR does not offer any fuzing options, so FDC personnel are not forced to train on fuzes. Fowler noted that “Different types of fire missions require a more detailed process that includes numerous fuze types, using GPS keys, and inputting target description. My Soldiers do not train on this enough and it is probably what they will be doing for a real-world mission.” Creating a multi-fuze MPAM certification table with the Trainer Pod prepares rocket artillery units to support special operations and urban warfare with precision rockets. This also forces FDC Soldiers to become familiar with the diverse fuzing capability of the GMLRS.

Soldiers in cannon artillery units will be provided an opportunity to work through misfire procedures whether they want to or not. Tubes will be punched and primers will not work. Rocket artillerymen do not naturally face most misfire procedures with live munitions until lives are on the line. Although they will never have to “punch the tube,” rockets are prone to issues that require immediate action. First Sgt. Christopher Castignanie, the B/1-94th FAR 1st Sgt. and a field artillery master gunner, explained that “The unavailability of munitions other than RRPRs for training, and the multiple years the rocket artillery community has deployed in non-conventional roles, has created a population of artillerymen that lack the real-world experience needed to address misfires or troubleshoot problems with precision missions.” A misfire mission as part of the certification tables with the Trainer Pod increases knowledge of troubleshooting procedures across the Army, and makes launcher crews more responsive to maneuver forces.

Conclusion

The Trainer Pod simulates numerous mission types better than live firing RRPRs. Rocket artillery is growing, and not just with an increase in the number of launchers that are fielded. Technological advances in munitions are rapidly affecting how rockets are employed. Rockets are a combat multiplier capable of supporting any mission set. To stay relevant on the battlefield requires more than just launchers and munitions; it takes training and competency. It is imperative that Soldiers are prepared to do their job in combat. To ensure this, training must replicate combat operations. Relying on individual unit DST or STT programs to ensure artillery, as a community, is combat ready is a recipe for failure. The Fires Center of Excellence must modify rocket artillery section certification to encompass the Trainer Pod so that sections can be proficient on complex precision fire missions they will be expected to process in combat.

Capt. Brennan Deveraux is the B Battery, 1st Battalion, 94th Field Artillery Regiment commander. He also previously served as the Headquarters and Headquarters Battery, 17th Field Artillery Brigade commander, where he participated in Warfighter 18-02 in the Republic of Korea and as a High Mobility Artillery Rocket System liaison officer forward in Iraq in support of Operation Inherent Resolve. Deveraux is a graduate of the Marine Expeditionary Warfare School and holds a Bachelor’s degree from the University of Washington in political science.