

Mortars – Responsive, Accurate and Lethal

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Recent U.S. combat operations affirm the importance of mortars on today's battlefield. As one Army mortarman stated following operations in Afghanistan, "Mortars were the primary organic killer. Mortars were the most responsive and most integrated fire support. They were very effective at hip shoots and at destroying enemy rocket-propelled grenade teams in urban environments." Similar comments testifying to mortars' responsiveness and effectiveness, particularly in urban operations, have come from soldiers who served in Iraq combat operations.

Our adversaries have attempted to negate our technological advantages through the use of “hugging tactics” in urban environments. They attempt to engage our forces — not to defeat them — but to harass and generate political support from the populace through increased casualties. These tactics require that our maneuver

forces have a capability to quickly and accurately respond to threats. Modern combat operations’ dispersed nature demands greater precision, accuracy, range, responsiveness, sustainability and lethality from indirect fire systems. Mortar’s inherent responsiveness to the maneuver commander makes these weapons the ideal platform on which

the Army and Marine Corps can focus their indirect fire transformation efforts.

The Product Manager for Mortar Systems (PM Mortars) works daily with the U.S. Army Infantry Center; Office of Naval Research; Marine Corps Systems Command; U.S. Army Armament Research, Development and



SPC Seth Gerkin (front) and PFC Brian Cruz, 303rd Armor Regiment, 81st Armor Brigade, fire a 120mm mortar during operations in Balad, Iraq, May 21, 2004. (U.S. Air Force photo by SSG Aaron Allmon II.)



Marines from Lima Company, Third Battalion, Second Marine Regiment, fire 60mm mortar rounds during live-fire training at a range in Northern Kuwait during *Operation Enduring Freedom* last year. (U.S. Marine Corps photo by LCPL Gordon A. Rouse.)

Engineering Center; users and other materiel developers on mortar modernization efforts. Ongoing development of precision mortar munitions, digital fire control systems for various platforms, extended range mortar munitions and lightweight mortars will further enhance battlefield

commanders' ability to conduct decisive combat operations.

PM Mortars has implemented a systems approach to determine battlefield mortar needs and maintain control over the entire mortar systems development process. All development

efforts take into account the mortar systems triad that consists of ammunition, fire control and weapons/platforms. These three entities must act as one to form a complete battlefield system. All requirements and materiel solutions for one leg of the triad must take into account the

impact on the other two legs and, ultimately, to warfighters.

Ammunition

The Project Manager for Combat Ammunition Systems is responsible for the XM395 Precision Guided Mortar Munition (PGMM) and the XM984 Family of Extended Range Ammunition (FERA) programs, two key programs in the ammunition arena. The PGMM gives the close-combat warfighter the first organic precision indirect fire capability. Designed to engage small targets and limit collateral damage, PGGM will be the weapon of choice for mortarmen operating in urban or restrictive areas against specified target sets.

FERA is a technology development program that, if fully funded, will reach Milestone B in FY07. The program is designed to provide a common cargo carrier for the extended range mortar. The mortar must be able to operate with currently fielded mortar systems and the next-generation mortar platform — the Non-Line-of-Sight Mortar (NLOS-M).

Fire Control

The Mortar Fire Control System (MFCS) is truly a success story for PM Mortars. The system was fielded to the 1st Cavalry Division and follows the Army's modularity and Unit Set Fielding plans for the entire Army mortar

inventory. The MFCS will give our heavy and Stryker forces a fully digitized, Paladin-like capability that will improve accuracy, lethality and survivability.

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The need for timely and accurate ballistic calculations has made the M23 mortar ballistic computer obsolete. Efforts are underway to incorporate an up-to-date ballistic calculator that leverages Army common hardware — the Lightweight Hand-held Mortar Ballistic Computer (LHMBC). The LHMBC (see photo on Page 49) is taking an incremental approach to achieving a fully functional lightweight mortar fire control capability that is comparable to the heavy MFCS variant. The LHMBC will calculate ballistic solutions for the full family of mortars, reducing the time from mission receipt to round-on-target from 8 minutes to 90 seconds or less.

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Weapons and Platforms

PM Mortars manages the full life cycle for all dismounted mortar platforms and works closely with PM NLOS-M, Stryker Brigade Combat Team and PM Combat Systems to provide fire control solutions and technical support. In addition, PM Mortars is also pursuing initiatives to make the Army's light forces more lethal and effective. For example, the Arms Room Concept (ARC) has been introduced to give Rangers and light

forces the 120mm Mortar system. The ARC lets the commander tailor capabilities to each operational situation to meet mission requirements. A lightweight dismounted mortar weapon is also in development under PM Mortars as one of several solutions to ultimately lighten the soldier's load. The new mortar can be deployed and activated quickly so warfighters can travel greater distances with a lighter system that has equal or greater firepower.

Every combat action in the last century has seen the effective use of mortars. It is clear that mortar systems are relevant on today's battlefield and will be key combat multipliers in Future Force operations. As PM Mortars pursues innovative, technologically driven mortar systems that are relatively easy to use and highly effective, we are proud to honor our motto: "Committed to Serving the Warfighter."

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