

The Multicapable Maintainer: A Vital Combat Enabler

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The Army of the 21st Century will operate on a digitized, non-linear, fast-paced, and lethal battlefield. One key to surviving on that battlefield will be combat systems' readiness and a commitment to placing soldiers with the right skills and technology at the right place on the battlefield to quickly diagnose and repair these systems.

The Army's Force XXI divisional redesign requires combat service support (CSS) units to be more agile and capable of covering greater distances on the battlefield to keep up with highly mobile and lethal maneuver forces. Likewise, it requires maintainers with a broader range of skills who are able to complete both organizational and on-board direct support repairs forward on the battlefield. The Multicapable Maintainer (MCM) is an Ordnance Corps initiative that supports these critical requirements.

"The intent," explained Dr. Aileen Tobin, program manager, "is to develop two, full-up MCMs — one for the Abrams tank and one for the Bradley Fighting Vehicle — who can be relied upon to perform all current organizational and on-board direct support tasks for the M1 tanks and M2/3 fighting vehicles in the maneuver battalions."

"The goals of the program were defined in 1998," explained MG Dennis K. Jackson, Chief of Ordnance. "Those goals are to combine unit and on-board direct support maintenance skills, align maintenance skills with technology, enable the force with the best tools and technology, and optimize capabilities and the impact on combat effectiveness." This has required a realignment not only of training, but also the Military Occupational Specialty (MOS) structure in Career Management Field (CMF) 63.

The MCM program is an outgrowth of an earlier study conducted from August 1991 to January 1993 to combine 17 CMF 63 MOSs into five notional MOSs responsible for both organizational and direct support maintenance. In May 1996,

a follow-on study was initiated to compare two consolidation options. Summarizing this study, Tobin said, "We looked at Abrams and Bradley systems mechanics versus hull and armament sub-system mechanics. The results favored the systems over the sub-system mechanics."

"Obviously," noted Jackson, "this is a large and complex initiative which will significantly benefit the overall organization, management, and performance of maintenance operations, as we know them today under the Army of Excellence."

The new Abrams MCM (notional MOS 63A) will take on all of the Abrams organizational tasks currently performed by the Abrams Turret (MOS 45E) and Abrams Hull (MOS 63E) Mechanic, as well as the on-board direct support tasks now performed by the Armament (MOS 45K) and the Track Vehicle (MOS 63H) Repairer.

Similarly, the new Bradley MCM (notional MOS 63M) will assume all of the Bradley tasks currently assigned to the Bradley Turret Mechanic (MOS 45T) and the Bradley Hull Mechanic (MOS 63T), as well as the on-board direct support tasks now performed by the Armament Repairer (MOS 45K), and the Track Vehicle Repairer (MOS 63H).

"To optimize the capabilities of these MCMs and their impact on combat effectiveness," noted Jackson, "we will also realign all the wheeled vehicle, armored personnel carrier (M113), recovery vehicle (M88), and Multiple Launch Rocket System maintenance currently conducted by the 45E, 63E, 45T and 63T personnel to MOS 63B/S (Light/Heavy Wheel Vehicle Mechanic) and 63Y (Track Vehicle Mechanic) as appropriate." According to Tobin, transition training was scheduled to begin for the mechanics assigned to the 4th Infantry Division in Fiscal Year 1999. Skill level 1 and 2 transition training was to be conducted either at the Armor School or by utilizing mobile training teams, while skill level 3 (Basic NCO

Course) was to be conducted by mobile training teams and/or Regional Training Sites-Maintenance. Reserve Component units converting to Force XXI prior to Fiscal Year 2006 are also targeted to receive mobile training teams.

Resident training will be phased in as follows:

Advanced Individual Training (AIT): February 2000, instructor certification; June 2000, first class starts; and, October 2000, first class graduates.

Basic Noncommissioned Officer Course (BNCOC): January 1999, instructor certification; and 3d Quarter, Fiscal Year 1999, first class graduates.

Advanced Noncommissioned Officer Course (ANCOC): No change to the Program of Instruction.

The Abrams Tank System Maintainer course will be 15.3 weeks in length and will train 40 critical tasks to support the M1A1; an Additional Skill Identifier (ASI) course will support the digitized M1A1D, M1A2, and the M1A2(SEP) systems. The Bradley Fighting Vehicle System Maintainer course will be 13.4 weeks long and teach 20 critical tasks on the M2A2, M3A2, BFIST, and Linebacker systems; an ASI course will focus on the M2A3 when it is fielded. All courses will incorporate organizational and on-board direct support tasks.

"In addition to Force XXI units," Tobin said, "graduates will also be assigned to Army of Excellence units in lieu of existing 45E/63E and 45T/63T mechanics.

Key to Success: The Forward Repair System-Heavy

The overall success of the MCM proposal will depend on several other key enablers being in place. A major enabler is the Forward Repair System - Heavy (FRS-H), which is a flat rack-mounted maintenance platform designed to support forces in the forward battle area. "The FRS-H is a 'must have' enabler for Force XXI," stressed Jackson. "It will

provide the Multicapable Maintainer with the ability to repair battle damaged heavy combat systems 'on-site,' up through the direct support level."

The FRS-H has a 5.5-ton crane, which is MIA1 capable, full arc and MIG welding, state-of-the-art diagnostics capability, industrial-grade pneumatic and electronic tools (with life-time warranties), a 175 PSI air compressor, and a 30 kw tactical quiet generator. The diagnostic enablers which will enhance the MCM's abilities to provide "Service to the Line, On Line, On Time" include the Soldier Portable On-System Repair Tool (SPORT) and Integrated Electronic Technical Manuals (IETMs).

"The FRS-H provides high tech on-site support for Force XXI heavy combat systems," explained Jackson. "It minimizes the need for additional maintenance equipment to complete the mission. The FRS-H will replace the current M113 maintenance vehicle (with its entourage of cargo and tool vehicles) and displace outdated tool sets.

"The FRS-H has sufficient mobility to deploy with the combat trains and provide continuous support of the maneuvering forces. This is integral to the ability to roll-up organizational and direct support maintenance capabilities in the Force XXI design. We will be able to move our direct support on-system capability forward.

"The design of the enclosure and components provides maximum efficiency, capability, safety, and accessibility," Jackson continued. "Since the system is assembled on a flat rack mounted variant of the PLS vehicle, it can perform its mission mounted or dismounted."

Keeping up with the maneuver forces is essential, and the FRS-H and its associated PLS vehicle are designed to do that. The PLS is equipped with a 500-horsepower, V8 Detroit Diesel 8V92TA engine and a five-speed automatic transmission. Central tire inflation, Jackson explained, gives the truck the ability to cross rugged terrain with ease. The truck is capable of operating at a top road speed of 56 miles per hour and has a fuel capacity of 110 gallons with a cruising range of 336 miles.

"Simply put," Jackson stated, "the Army cannot afford to reduce maintenance manpower requirements without the more proficient and better-equipped maintainers represented by the MCM and FRS-H programs." The MCM program is a cooperative effort between the Ord-

nance Corps and the Armor branch. Participating as part of Tobin's MCM matrix management team were representatives from the Combined Arms Support Command's Directorate of Training and Directorate of Combat Developments, the Ordnance Center and School's Directorate of Instruction, the Ordnance Personnel Proponency Office, the Ordnance Center and School's Noncommissioned Officer Academy, and the Armor School's 1/81 Armor Battalion, 1st Armor Training Brigade.

Ordnance Units and Organizations Will Change with Introduction Of Multicapable Maintainer

In testimony before the House Armed Services Committee, LTG John G. Coburn, the Army's Deputy Chief of Staff for Logistics, noted: "A significant reason we enjoy an excellent readiness posture is the extraordinary efforts of our outstanding soldiers. Our soldiers in the field are working harder than ever to keep our equipment combat ready."

The Ordnance Corps is working to reorganize units and organizations to ensure that these hardworking soldiers have a structure to support their efforts. In conjunction with the introduction of the Multicapable Maintainer, the Forward Repair System-Heavy, and embedded diagnostics, the Corps is working diligently to ease the maintenance burden on the already short number of maintainers in the field. Issues impacting on the programs include reducing the cost of maintenance, more efficient planning of the soldier's limited maintenance time, less strain on finite transportation, and an ultimate goal of limiting, if not eliminating, the need for unscheduled maintenance.

"The current program of fix forward will become replace forward - fix rear," noted MG Dennis K. Jackson, Chief of Ordnance. "We will have one maintenance level for maneuver battalions and rely on tailored teams to work both direct support and organizational support.

"Field level maintenance will focus on end item or on-system repair through replacement of components and assemblies," Jackson noted. Under the management of maintenance shop operations, support operations cells, and materiel management centers, this level of main-



tenance will focus on readiness and will be performed within battalions, brigades and armored cavalry regiments, divisions, and maintenance companies in the corps and theaters.

"The sustainment maintenance level will focus on off-system repair," explained Jackson. "This is the repair of components and assemblies, and will be done by Department of the Army civilians, contractors, and component repair companies." This level of maintenance will be conducted in the corps and theater and will be managed by the Integrated Sustainment Maintenance Manager.

According to Jackson, "This concept of maintenance will optimize the readiness of weapon and support systems forward, while leveraging on the Army's Velocity Management and the Battlefield Distribution System at the corps and theater level."

A reduction in maintenance repair cycle time will be accomplished through the rollup of organization and direct support repair at the field maintenance level. "This will be realized," noted Jackson, "by significant reductions in the administrative and coordination delay time."

This is not a new effort. "Since 1995," Jackson stated, "we have made major changes to the Ordnance force structure to support Force XXI TOE division and corps units. Our new maintenance organizations will be more modular and flexible."

The program will require that the key enablers be in place. These include the multicapable maintainer, the Forward Repair System-Heavy, the Contact Maintenance Truck, and modern tool kits and shop sets. "We also need to ensure that we install and enhance on-board diagnostics tools. From there, we can move to a prognostic capability through software development."

The goal of the complementary programs is to provide maintenance soldiers, organizations and equipment that increase readiness and combat power.