

Converting the M992A2 into an FDC platform

By 1st Lt. Matthew Spearman

Shoot, move, and communicate. This is an adage all fire support personnel should be familiar with, but its importance remains indisputable. In 2018, 1st Battalion, 5th Field Artillery, 1st Armored Brigade Combat Team (ABCT), 1st Infantry Division, “Hamilton’s Own,” needed to find a dependable fire direction center (FDC) vehicle that was capable enough to maneuver with and support the newly delivered M109A7 Paladin system during robust field trials and exercises at Fort Riley, as well as National Training Center (NTC) Rotation 18-10. The FDC plays an integral part in the Fires warfighting function. FDC operations include, but are not limited to, safely processing firing data, establishing voice and digital communications with higher headquarters, and serving as a tactical level command node. These various functions of the FDC must be based on a durable, reliable and flexible platform. Currently, FDC operations are conducted out of the M1068A3 Standard Integrated Command Post vehicle. However, it is also well known that the M1068 has severe limitations operating on today’s battlefield. This article will discuss the need for a new vehicle to replace the M1068A3 as an FDC platform and provide some insight on 1-5th FA’s testing of the more reliable M992A2 Field Artillery Ammunition Supply Vehicle (FAASV) as an interim solution.

A 1960s platform in a 21st Century battlefield

The M1068 series has been in service since the early 1990s and continues to serve as the primary vehicle for mobile command

posts and FDCs. However, the M1068 is merely a conversion kit upgrade on the original M113/M577 series of vehicles, whose technology dates back to the early 1960s. These vehicles have not received any significant mobility, armament or crew protection upgrades since their introduction nearly 60 years ago. Most importantly, the M1068A3 fails to provide basic internal nuclear, biological and chemical (NBC) protection. In addition to this lack of internal protection, the track commander (TC) has no way to maneuver the vehicle while the TC hatch is closed due to a lack of external optics.

Furthermore, the substantial maintenance requirements of the M1068A3 continue to be a significant concern to the operational readiness and combat effectiveness of a firing battery. During 1-5th FA’s M109A7 Paladin Integrated Management (PIM) fielding in early 2018, one FDC section needed to use five different M1068A3 vehicles, in the span of three months, because of non-operator level mechanical issues. Leading up to and through NTC 18-10, the operational readiness level of the M1068A3 fleet throughout 1st ABCT, 1st ID was of great concern to the tactical and operational commanders. Throughout NTC 18-10, 1-5th FA was only able to sustain two of its 10 M1068A3s; an eye-opening weakness of the battalion’s inability to provide fire direction on its organic platform. This inability to rely upon the M1068A3 directly affected the capability of the firing batteries to displace quickly and maintain effective communication with a higher headquarters.

These maintenance issues forced the firing batteries to use FAASVs to tow the inoperable M1068A3 vehicles, subsequently taking ammunition supply vehicles out of the fight, and in some cases, utilizing HMMWVs as an emergency solution to maintain some fire direction capability.

Finding a replacement

The development of a next generation FDC vehicle is directly related to two of the Army’s six modernization priorities: Long-Range Precision Fires and the Next Generation Combat Vehicle. An improved FDC vehicle should also possess multi-domain capabilities and support future Army network systems. Through the Extended Range Cannon Artillery (ERCA) program, the Army has invested in the future strategic and tactical capabilities of the Fires community. However, there can be no effects on target if the FDC sections are non-mission capable due to maintenance issues, survivability concerns or an inability to maneuver at the pace required by other battlefield systems. While the Army has focused heavily on the “shoot” side of the Fires equation, equal emphasis should be placed on “move and communicate” (sensor and processing). In order to explore temporary solutions to this problem, 1-5th FA made the decision to convert surplus M992A2 FAASVs, which were recently replaced by the M992A3, into FDC vehicles in preparation for NTC Rotation 18-10.

The M992A2 FDCV received extraordinary praise from both operators and observer controller trainers (OC/T) during the NTC



An M992A2 during the reconfiguration process. (Courtesy photo)

rotation. It proved to be an exceedingly dependable platform during high-tempo operations. The M992A2 FDCVs experienced significantly less maintenance issues compared to the battalion's M1068 fleet. From a targeting perspective, the M992A2 FDCV was able to maintain a tactical profile while maneuvering behind howitzer sections, limiting the chance of enemy observation and detection. This is especially important since FDC vehicles are a high priority target for enemy Fires. The M992A2 FDCV's similarities to the M992A3 CAT make it indistinguishable on the battlefield allowing it to stay hidden in plain sight. The M992 platform also allows the FDC the ability to better secure their own position with a mounted heavy weapons systems, which the M1068A3 does not offer.

The desire to find a replacement to the M1068A3 as an FDC vehicle has actually been done before. In the 1996-1997 timeframe, 4-42nd FA, operating as part of Task Force XXI (TF XXI), converted M992 vehicles into Platoon Operation Centers, which combined the functions of an FDC with advanced command and control capabilities. The performance of 4-42nd FA's FDC-Vs during a series of advanced warfighting experiments, culminating with an NTC rotation, mirrored those of 1-5th FA: the FDC-V was the superior platform regarding mobility, reliability, and communication. Although the Army has a new command post M113/M1068 replacement program in development, the M992A2 offers a simple and quick replacement to the meager M1068A3 and can rapidly fill the capabilities gap in the interim until the new platform is in place.

The M992 FDCV Loadout plan

The M992's modular internal design offers the space and potential to function as a modern FDC

platform. The 1-5th FA removed the ammo racks, and hand-made desks and shelving units were installed (see Figure 1). The only major external modification required is installing a 24V DC/1800-watt power inverter to power the AF-ATDS, internal lights, and other optional electronics.

The figures illustrate the internal (Figure 1) and external (Figure 2) loadout plans for the M992A2 FDCV.

In addition, it is believed that installation of a Quick Erect Antenna Mast System (QEAM) and High Frequency (HF) transceiver and antenna would greatly expedite establishing long range communications capabilities. However, these desired modifications were not possible in the short term. Safely attaching the QEAM antenna and HF radio components to the exterior of the vehicle would require approval to drill into the armor, a lengthy process that requires approval from division headquarters. However, having these modifications approved is worthwhile. Providing the ability to provide high frequency, frequency modulation voice, and frequency modulation digital while moving is incredibly appealing to an FDC on the modern battlefield.

Looking to the future

In January 2019, 1-5th FA rotated to Poland in support of Operation Atlantic Resolve and the decision has been made to continue the experiment of converting the M992 into a fully functional FDC platform.

Not only will this be the first rotational fielding of the M109A7s, but 1-5th FA will also have the opportunity to test and improve the M992A2 as a temporary replacement for the M1068A3. Due to the fielding of 18 M992A3 CATs, 1-5th FA is uniquely capable of testing this concept further because they currently have 18 M992A2's awaiting disposition. Now that they have developed a standard for transitioning the systems from ammunition supply vehi-

cles to FDCVs, 1-5th FA is in position to prove the concept for the Army. It is hoped that this testing results in similar results to those found in TF XXI experiments, in which Soldiers from 4-42nd FA concluded there's no question in the minds of the crews who spent months operating and testing the vehicle: the FDC-V increases the [FDC's] ability to shoot, move and communicate with a Paladin platoon. If these lessons from the

past hold true, then the future looks bright for the M992 as the FDCV for "Hamilton's Own."

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Figure 1. (Top) The changes made to the communication equipment during the reconfiguration process. (Courtesy illustration)

Figure 2. (Bottom) The loadout plans for the M992A2 after reconfiguration for FDC operations. (Courtesy illustration)

