Remote Communications Platform

CAPTAIN MARK R. HAYZLETT

Although light infantry division units must be able to maneuver over all types of terrain, they still have to maintain elaborate communications systems. Because of the rapid changes in MTOE, mission, and C³I technology, the platform for tactical operations center (TOC) radios is critical to the efficiency of a light unit's operations. The only vehicle the battalion S-3 has is a HMMWV (high-mobility multipurpose wheeled vehicle) with a three-quarter-ton trailer. Any additional vehicles would probably be more of a burden, while a rucksack is not appropriate for the job either. The best way to do more with less, then, is to redesign the TOC at battalion level using a remote communications platform (RCP), such as the one I designed and used in Korea in 1983.

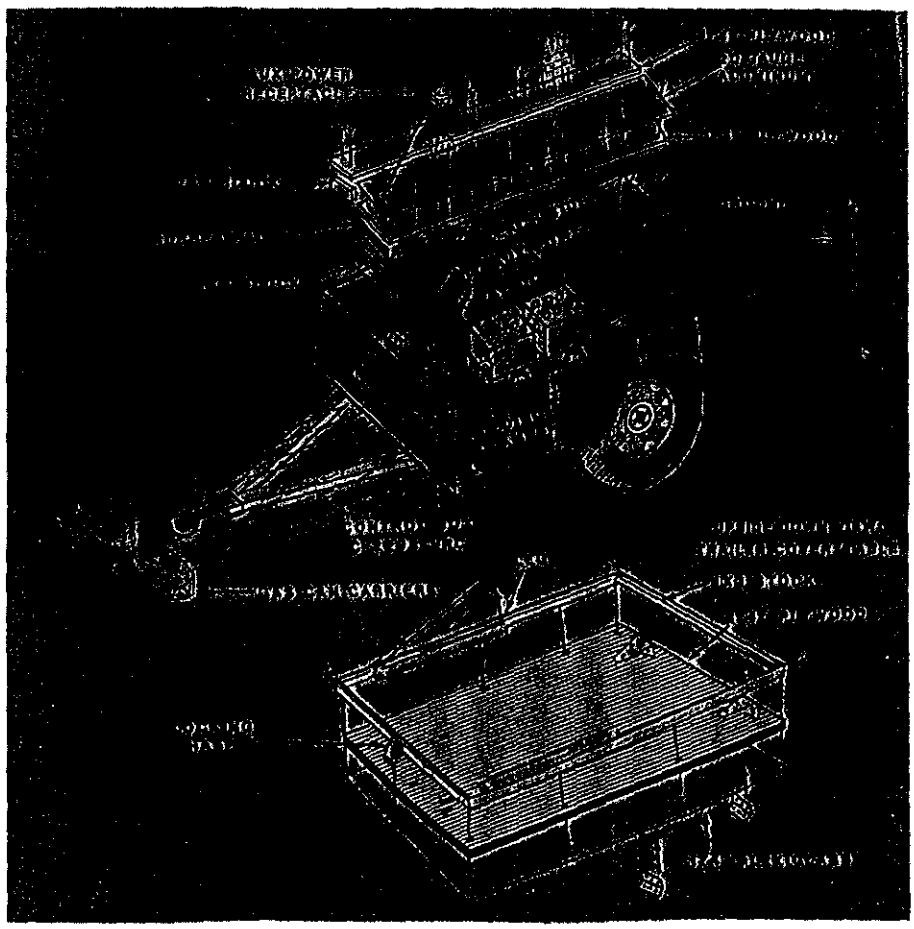
An RCP is simply a modified trailer on which radios and various TOC equipment can be mounted. Instead of being inside a vehicle, the TOC is built around the RCP trailer. A common three-quarter-ton trailer can be modified at unit level to function as an RCP without seriously affecting its utility as a trailer. The accompanying illustration shows exactly how to set up an RCP using the wiring schematic from page 2-43 or TM 11-5820-401-12.

The radio equipment is mounted on a cambered shelf along one side of the trailer. An auxiliary power receptacle is mounted on the shelf, and the floor is drilled to accommodate a dual-battery tray. Finally, a lid is assembled from half-inch plywood and one-by-two-inch stock, hinged at the top of the tailgate and fitted with a sheet of quarter-inch plexiglass on the table top side. Further modifications could include a shelf for the radio operator that folds out from the forward wall with a junction box and a headphone jack.

The load inside the trailer should consist of the 4.2-kilowatt generator, two 12-volt tank or truck batteries, antennas, and a footlocker with radio accessories and paperwork. Once the lid is latched over the trailer, tentage and camouflage can be strapped on top with ropes or sling webbing. Diesel fuel cans may be mounted in carriers bolted to the front wall of the trailer for generator operation.

The concept of RCP operations is simple, efficient, and flexible for any battalion mission. The batteries provide silent operation for limited visibility or urban operations for an estimated 36 hours of normal use (without wearing down prime mover batteries). They can be recharged during other power modes with the 4.2-kilowatt generator or when slaved to any 24-volt vehicle system using the NATO receptacle and a regulated circuit in it.

An S-3 equipped with an RCP may choose to move the TOC with his



HMMWV alone, with the RCP towed by another vehicle, or with it sling loaded under a UH-1 or UH-60 helicopter. Although the airmobile capability has not been tested, it could enable a unit to establish complete command, control, communications, and intelligence facilities rapidly in terrain that might be inaccessible to other vehicles without tying up a helicopter the whole time.

An RCP can be placed in operation in the hastiest circumstances by propping the lid open with a stick so the radios can be adjusted. Further preparations could include setting up a tent with the RCP trailer and operators in the vestibule, leaving the map table and the charts in the main tent area. Routine TOC activities could be carried out with less traffic, more security, and more room for planners to do their jobs. Set-up and tear-down would take less time also, since all the equipment would be easy to reach and simple to operate.

The prototype of my design was built by Specialist-4 DeGrace of Troop D, 4th Squadron, 7th Cavalry in Korea in 1983. All he needed was a few sketches, some basic supplies, some hand tools, some advice from the communications shop, and a weekend. We used a quarter-ton trailer, because that is what we had available. Our unit used the RCP to mount two RT-524s with cipher equipment, but the shelf can be drilled for as many variations of installation kits as required. Battalion operations would probably need the larger three-quarter-ton trailer instead.

The most significant advantage to using the RCP is the flexibility for equipping the TOC for a wide variety of missions without sacrificing its performance in any mode. The RCP concept of building the TOC around a trailer, rather than within a vehicle, is a means of getting the job done better with less in an austere light infantry environment.

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Mortar Ballistic Computer

SERGEANT FIRST CLASS JOHN E. FOLEY

Muleskinners looked upon the truck with fear and loathing; old soldiers said the M1 Garand would never replace the M1903 Springfield; and some others thought helicopters were nothing more than a passing fad. I expect a similar reaction to the new M23 mortar ballistic computer (MBC).

The world is changing, and so is the infantry. With new weapons and tactics being introduced every year, the mortarman has long needed a device to improve his fire control capabilities. The challenge of the future for the mortarman is to be faster and more accurate than ever before, and for longer periods of time. His guns may be spaced 100 meters or more apart to ensure their survivability, but he will still have to maintain control of them and continue to provide timely and accurate fires. The mortar ballistic computer will allow him to do this and more.

The MBC will replace the graphic firing fan (GFF) and the M16 plotting board as the primary means of fire control for infantry mortars. While the old manual procedures are accurate, that accuracy and also the speed of the computations are dependent upon the skill of the operator and the condition of the equipment. In addition, the GFF and the M16 plotting board are bulky to carry and require a large amount of light if they are to be used effectively.

STANDARD ISSUE

The M23 will be the standard U.S. Army issue mortar ballistic computer and will be used for all mortar fire direction center procedures. It is in an aluminum casing (OD green), weighs seven pounds (with battery), is ten inches long, seven inches wide, and two inches thick. The battery is a military standard BA-5588U (lithium) model.

The keyboard is made up of 48 separate keys, organized by color — blue keys for initialization, orange for fire missions, white for entering numbers and letters, yellow for review of data, and green for action. The logical sequence of the keyboard and the programming of the computer will automatically select the proper key if the operator makes a mistake or gets out of sequence. These features make the MBC fast and easy to learn, use, and operate. The keyboard itself has a positive feel to it — an operator can even use it wearing gloves with liners.

The most important function for the MBC will be to compute firing data for all standard U.S. mortars. It is also programmed for all currently available ammunition. The operator simply selects the caliber of mortar he wants to use — 60mm, 81mm, or 107mm — and the type of ammunition (including the M720 60mm or the M329A2 107mm