

Because the company XO must also send reports on the battalion net, the formation of this extra maneuver element does create a radio frequency problem. The XO must monitor both the battalion and the company nets. One solution is to place the trail tank section on the company frequency with the XO, the commander, and the three platoon leaders. Until the company has made contact with the enemy, this section should be strictly in a listening mode.

All of these techniques have been used effectively during four major evaluated exercises in the past year—one at the National Training Center, one at Yakima Firing Center as the opposing force, and two in external evaluations at Pinon Canyon, Colorado.

Using these techniques, a mechanized infantry team commander can improve the survivability of his team and increase his chances of accomplishing his mission successfully.

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# The 60mm Mortar

## How Good Is It?

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The Joint Readiness Training Center (JRTC) at Fort Chaffee, Arkansas, is the equipment and doctrine test bed for light, airborne, air assault, and Ranger units. One weapon system that all of these units have in common is the M225 60mm mortar. (See also "Light Infantry 60mm Mortar," by Captain Michael T. Natusch, INFANTRY, November-December 1976, pages 33-35; and "AOE and the 60mm Mortar," by Captain Morton Orlov II, INFANTRY, September-October 1987, pages 26-30.)

At the JRTC, this mortar, its employment, and the mortar section's capabilities are routinely observed, and on the surface it appears to be an ideal weapon: It is light, highly responsive, and can provide a high rate of fire in either an indirect or a direct fire role. It weighs 46.5 pounds (51.5 pounds less than the 81mm mortar); its highly effective rounds—high-explosive, white phosphorous, and illumination—weigh only three to five pounds each (five to seven pounds less than the 81). A new high-explosive round will have a range of more than

4,000 meters with a bursting radius of 29.5 meters—as effective as our current 81mm mortar ammunition.

The weapon can be fired in a hand-held manner (total weight is only 18.5 pounds) out to 1,300 meters, using a trigger option instead of the traditional drop fire method. Furthermore, any soldier can learn to fire it this way in a matter of minutes.

Finally, and perhaps most important for the infantrymen whom this weapon is designed to support, two 60mm mortars are assigned to every light, airborne, and air assault company, and three to every Ranger company. In short, it is an

infantry commander's own indirect fire support.

Observations at the JRTC suggest, however, that this portrayal may not be entirely accurate. There are definite problems. Two of the most obvious are the mortar section's organization and the current state of training and doctrine—specifically, the mortar's tactical employment and its ammunition supply and resupply.

An infantry company mortar section today is made up of two M224 mortars and six soldiers, organized as shown in Table 1. The section leader also acts as a gun squad leader, while either he or the squad leader acts as fire direction center (FDC) chief and computer. Usually one of the two must also act as the radio telephone operator (RTO) for the section. In other words, these six soldiers have at least nine specific functions to perform, possibly more.

Furthermore, despite its light weight, the mortar—with its associated TOE equipment, ammunition, and normal TA-50 soldier's load (including food

| CURRENT ORGANIZATION |  |
|----------------------|--|
| 1                    | Section Leader (11C30)                       |
| 1                    | Squad Leader (11C20)                         |
| 2                    | Gunners (11C10)                              |
| 2                    | Assistant Gunners/Ammunition Bearers (11C10) |
| TOTAL: 6 soldiers    |  |
| Table 1              |  |

and water)—is still too heavy for a six-man section to carry. In addition to the two weapon systems, the mortar section must carry one M23 mortar ballistic computer, binoculars, aiming stakes, TA-1 and wire, one AN/PRC-77 radio, and up to six mortar rounds per soldier. Section personnel sometimes carry up to 40 pounds each in mortar-specific equipment, which is entirely too much if the soldiers are to travel long distances and still fight effectively.

Typically, mortar sections solve this load problem by leaving most of the equipment behind. They commonly carry only what is necessary to fire the weapon in a direct fire manner (18.5 pounds), some binoculars, and some ammunition. But this solution defeats the purpose of the weapon and makes it less effective. It limits the mortar to a direct lay/direct alignment role (line of sight and therefore more vulnerable), with a range of only 1,300 meters. And because aiming must be done by hand and eye, it is also less accurate.

The only true solution to the load problem is to increase the size of the section. Although this may seem like heresy in this age of budget restraints and troop reductions, it would spread the section's duties more equitably and would allow a greater distribution of equipment with lighter individual loads. The section could then carry all of the equipment it needs.

The organization I propose for the light infantry mortar section includes 11 soldiers, as shown in Table 2. This organization, by allowing each soldier to focus on one specific duty, would increase the section's effectiveness. Furthermore, a larger section could carry more ammunition, and this would increase its responsiveness and immediate fire support capabilities. The section would have to rely less upon the rifle platoons to carry the ammunition.

(The entire section should be armed with M16A2 rifles instead of 9mm pistols so that they would be better able to defend their position and their valuable weapons systems. Four soldiers in the current six-man section are authorized pistols.)

An alternative proposal (Table 3)

takes into account the era of constrained resources into which the Army is moving. This organization is the minimum that could effectively accomplish the section's mission of fire support. It would increase the section's effectiveness by allocating the soldiers' duties more efficiently and by providing two more soldiers to carry the section's equipment. The present six-soldier section does neither.

**AMMUNITION**

The current organization also presents a problem with ammunition supply and resupply. The current doctrine and training guidance does not adequately address ways to get ammunition to the 60mm mortars in quantities that will make them most effective.

In defensive operations this has not been a problem, because the section is usually stationary and ammunition can be stockpiled at one or two positions. When a company is conducting offensive operations or is on the move, however, it can rarely take along more mortar ammunition than the mortar section itself can carry. Depending on what else each

soldier must carry, this averages between 20 and 40 rounds for the section, a supply that can easily be fired in just one minute. And trying to conserve rounds by firing only a few at a time rapidly diminishes the weapon's effectiveness.

One answer is to carry more rounds, but the section's individual loads are already too heavy. The other answer is to have each soldier in the company's rifle platoons carry one or two mortar rounds, which would add 90 to 180 more for the section and vastly increase its capabilities. But when the section tries to consolidate these rounds when it stops and then attempts to redistribute what is left to the platoons' soldiers when the company begins moving again, more difficulties are created. On very few occasions when soldiers have tried this technique have they been able to do so successfully.

The only solution to this problem is for units to develop SOPs on how to distribute the ammunition among the soldiers or platoons, how to consolidate the ammunition where and when it is needed, and how to redistribute it again when the units move out. Then the units must actually practice these tasks during training exercises—using training rounds about the same size and weight as the real ones—not just simulate them.

At the JRTC, blocks of wood the same size as mortar round canisters are used. Each battalion should make, or have made, at least enough of these rounds (400 or more) for one company to use during field training exercises so that they can train on the supply and resupply of mortar ammunition. In addition, each company needs to train with the support platoon on the resupply of ammunition from the combat trains to the company, again using these training rounds.

No fancy tricks are involved, just realistic training instead of simulation. Commanders must ensure that they have their soldiers do in training, as closely as possible, exactly what they will do in combat.

Another problem has been employing the weapon. During the defense its use is well defined, and it is employed like any other mortar system. But in the of-

| PROPOSED ORGANIZATION                                   |  |
|---|--|
| 1 Section Leader (11C40)                                |  |
| 1 FDC Chief (11C20)                                     |  |
| 1 FDC Computer/RTO (11C10)                              |  |
| 2 Squad Leaders (11C20)                                 |  |
| 2 Gunners (11C10)                                       |  |
| 2 Assistant Gunners (11C10)                             |  |
| 2 Ammunition Bearers/Handlers (11C10)                   |  |
| <b>TOTAL: 11 soldiers</b>                               |  |
| Table 2   |  |
| CONSTRAINED RESOURCE ORGANIZATION                       |  |
| 1 Section Leader (11C30)                                |  |
| 1 FDC Computer/RTO (11C10)                              |  |
| 2 Squad Leaders (11C20)                                 |  |
| 2 Gunners (11C10)                                       |  |
| 2 Assistant Gunners/Ammunition Bearers/Handlers (11C10) |  |
| <b>TOTAL: 8 soldiers</b>                                |  |
| Table 3   |  |

fense, this weapon's responsiveness and man-portability open up new and distinct mortar employment techniques for the light infantry battlefield—techniques that are not recognized now because of a lack of doctrine on the subject.

One obvious technique—one that the 60mm mortar was specifically designed for and that units readily adopt—is to keep one mortar in the hand-held mode with the small base plate attached during movement so the section can engage targets of opportunity as the commander directs. This mortar can rapidly open fire on a designated target while the other is preparing to fire in the more accurate bipod mode using an FDC in a covered and concealed position. This will enable the section to provide rapid, continuous, responsive, and accurate fires while keeping its exposure to a minimum.

Another useful technique is to continue preparatory fires with the 60mm mortars after fires from the heavier weapons have been lifted or shifted. For example, during a company attack, as the fires from the 105mm howitzer and 81mm mortar are about to be lifted or shifted, the company's 60mm mortars

(from defilade) can be adjusted onto the target. The company FSO (who is the mortar observer) can see the objective, is either with or within sight of the mortar section, and is on the company radio net. He can adjust the mortars to fire on the objective, or on a planned breach point without endangering the breach force.

To provide destructiveness and concealment, the mortar can fire high explosive and white phosphorous ammunition, and can maintain the fires long after the larger artillery and mortars (with a less controllable bursting radius) have been lifted.

Current manuals such as FM 7-72, Light Infantry Battalion, give commanders numerous offensive and defensive techniques they can use. The same type of manual, or an addition to FM 7-90, Tactical Employment of Mortars, should be developed to help these same commanders employ the 60mm mortar to its fullest. (FC 7-90-1 touches on this, but only lightly.) It is hoped that these concerns will be taken into account as FM 7-90 is revised, for the manual needs to focus on the unique characteristics and capabilities of the

60mm mortar and its ability to play a more versatile role on the battlefield than its predecessors could.

Observations at the JRTC have proved that the 60mm mortar is a valuable asset to light, airborne, air assault, and Ranger company commanders. It is obvious, though, that with certain improvements this weapon can be made even more valuable. These improvements include a better organization, realistic (rather than simulated) ammunition supply and resupply training, and more emphasis on exploring employment techniques and updating training doctrine.

Observations from the training centers have led to useful weapon improvements in the past. It is clear that they can also lead to useful 60mm mortar improvements today.

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