TRAINING NOTES

Mortars in Mountains

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Mountains that are militarily significant cover about one-quarter of the world's land area. They are generally characterized by rugged, compartmented terrain with steep slopes and few natural or manmade lines of communication.

Historically, the focal point of mountain operations has been the battle to control the heights, and changes in weaponry and equipment have not altered this emphasis. Infantry mortars, with their light weight, simplicity, and versatility, remain the basic fire support element for units operating in mountainous terrain, and while they are immediately responsive to the infantry commander, he must understand how the severe environmental conditions can be expected to affect the capabilities of his mortar platoons. The following are some of the things he must consider.

First, in the mountains, fire support assets must be as mobile as the unit they are supporting. The M224 lightweight company mortar (LWCM) and the XM252 improved 81mm mortar (I-81) can be hand-carried from position to position. The 4.2-inch mortar, though, can be used only in positions near main roads. Commanders should also consider that when mortars must be brought in by helicopters they will also probably require additional airlifts for ammunition resupply and for displacement. All these operations are completely dependent upon the extremes of weather, which must be taken into consideration, too.

Command and control is more decentralized in mountain operations, which means that mortar platoons must be able to operate separately in sections. Because of the compartmented terrain, it may even be necessary to give operational control of a single mortar squad to an infantry platoon. This means that each section and each gun crew must be trained to operate alone. Hipshooting procedures become extremely important in such operations.

When it comes to fire support, high explosive shells with point detonating fuzes are very effective on rocky ground, because they scatter stones, which themselves become projectiles. Shells with proximity fuzes — except for the newer ones — are particularly effective on reverse slopes and in deep snow, but they lose their effectiveness when they are fired through dense clouds or falling snow. The new fuzes are not greatly affected by clouds or snow. Variable winds and steep mountain slopes do reduce the effectiveness of white phosphorous rounds.

Mortar fire is capable of reaching reverse slopes and neutralizing dead space. The 360-degree firing capability of mortars enables them to engage targets to the flanks and rear of their firing positions. Fire planning in mountains should also include narrow defiles used as routes of supply or routes of advance or withdrawal, along with any large masses of snow or rock that may be above enemy positions and supply routes. The possibility of avalanches or rock slides and their effects on the activities of friendly troops must be considered during the planning phase

In mountainous terrain, mortar gunnery can be difficult because survey data is usually not available

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and even when it is, it is likely to be exaggerated by the slope of the terrain. It takes practice to compute elevation changes accurately. Meteorological data is rarely useful because of the need to relocate the mortars within 10 kilometers of a METT station (in mountainous terrain) and because of the requirement for a valid registration. Shifting winds and changes in air pressure will have significant effects on mortar rounds. If the Mortar Fire Control Calculator (MFCC) is adopted, it will be of particular assistance to fire direction computers in the mountains.

Some of these same difficulties will also affect the observation of mortar fire. Additional observers will be required, and observation posts (OPs) generally should be emplaced on the highest available ground, although low clouds or fog may require that they be located at lower elevations. In locating their FOs, commanders should remember that they themselves often use hilltops as registration points and usually include them as targets in a preplanned target list, and should expect that the enemy commanders will do the same. The use of observed, as opposed to unobserved, fires should be normal since the rapidly changing meteorological conditions and the generally poor maps can decrease the accuracy of predicted fires.

The conditions encountered in mountainous terrain will have a significant effect on a unit's fire support, but the value of infantry mortars to commanders should not be overlooked. In fact, they may be the only fire support means available.

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