the driver, to maintain a squad's vehicle (under proper supervision, of course). It may even be necessary for one man to do it, because in garrison operations, many of the soldiers in a squad are frequently detailed to other duties during motor stables. But during field operations most of the squad members are usually available when maintenance is required. Field maintenance, therefore, should be a crew responsibility. There are other reasons for this as well.

It takes one man from 20 to 40 minutes to pull a good PMCS under the right circumstances with the proper resources. In a field environment, a squad seldom has that much time for vehicle maintenance, and several men can service a vehicle much more quickly than one man alone can. Besides, levels of fatigue are higher in the field, and one man working alone is seldom able to service and inspect his vehicle efficiently on a routine basis.

Here is one example of what a squad SOP for field maintenance might look like:

- The driver checks transmission, engine, fan tower, transfer gearcase, and hydraulic fluids. He also works the lights and observes the gauges, indicators, and the like.
- The track commander checks the engine compartment from the crew compartment for fuel leaks and any other problems. He also drains the fuel filters and checks the cupola and the armament.
- One man checks the differential and the final drives and services the air cleaner element from the front. He also checks the front lights.
- One man services the radios, fire extinguishers, batteries, and rear lights and inspects the ramp.
- Two men (one on each side) maintain the tracks, the suspension systems, and the shrouds.
- The squad leader supervises all of the above actions and fills out the 2404.

These suggestions may help you in your maintenance effort. They will certainly help you to stamp out that monster — the GITI.

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Mortar 86

LIEUTENANT MARK L. TORREY

One of the key elements in the Army's new Division 86 organization — the mechanized infantry division — is the single-function unit, a unit that has only one major weapon system and one that should, therefore, be more flexible and maneuverable. One of these single-function units will be an infantry mortar platoon in which all the infantry's mortars are consolidated at battalion level. Each mechanized infantry battalion will have a six-tube mortar platoon in its headquarters company.

Unfortunately, the concept of this new platoon leaves a lot to be desired in organization, in doctrine, and, most of all, in the mortar itself.

The new platoon is supposed to be equipped with the British 81mm mortar, the XM252, and this is a mistake. I feel that our own 4.2-inch mortar, the venerable M30, should be kept, because it has many advantages over the XM252 and only a few disadvantages. The advantages are that its illumination round is one of the best of its kind in the Army's inventory; its white phosphorous round is twice as effective in producing smoke; its high explosive round is far superior; and it is the only mortar we have that has a chemical round.

As for its disadvantages, it does have a lower rate of fire than the XM252, but in a 10-minute barrage, the explosive weight delivered by the XM252 is only three-fourths that of the M30, even though it uses more than twice the number of rounds in that time. Besides, in most cases, a few more powerful rounds are more useful than a large number of less powerful ones.

The M30 is also a heavier weapon, but in a mechanized infantry unit this should not be a critical factor, because the mortar is seldom moved from its carrier anyway. And with its range of 7,000 meters, it gives a battalion commander a means of engaging deep targets with a powerful round.

With a few improvements, the M30's capabilities could be increased considerably. The new M734 multi-option fuze — with its four height-of-burst settings, which can be set by hand — could be adapted to the M30's high explosive and white phosphorous rounds. It should not be too difficult to develop a new fuze for the mortar's illumination round, one with a luminous scale that could be set by hand, and this would reduce the amount of time it takes to fire the illumination rounds.

The mortar platoon's proposed organization should also be changed. The platoon should be a cross between the present 81mm mortar section and a field artillery battery, and it should have a headquarters element and two gun sections. Each gun section should have three five-man mortar squads, each with its own M106A2 carrier. The section's fire direction center (FDC) should have its own M113A2 vehicle and should have three mortar computers (one to use as a back-up or in the event the section had to be split). It should also have an M2 aiming circle and a three-net radio capability.

The headquarters elements should have two vehicles: an M113A2 for the platoon leader and an M548 to carry additional ammunition and to act as a resupply vehicle, manned by the platoon sergeant and a driver. The platoon leader's vehicle would double as the unit's reconnaissance vehicle. (The platoon leader should also have an M2 aiming circle in the vehicle to help him prepare new firing positions.)

The ammunition and resupply vehicle is needed because the platoon's mortars often will use large amounts of ammunition in a short time, and a battalion commander may be reluctant to part with a vehicle from his support platoon to take ammunition to the mortars. It is conceivable that eventually the mortar platoon will need its own full-fledged ammunition section.

Our mortar doctrine, which is essentially the same now as it was in World War II, Korea, and Vietnam, needs to be reexamined, too, in light of the new organization. For example, the mortars should be used in much the same way as artillery is used. They should never be placed in reserve but should be kept where they can always provide support. And they should not be kept in one place for too long, either; they should fire a few missions from one location and then move to another one. They should also be kept dispersed as much as possible, and their crews should do everything they can to conceal their firing positions.

Because mortars are not fast or accurate enough for destruction missions in a mechanized battle, their primary mission should be to provide quick, responsive, suppressive fires, including smoke and illumination. Precision mortar missions, in fact, should be done away with. Registration, meteorological messages, and mean point-of-impact registration take too much time. Usually, the only reason mortars register is to parallel the sheaf, and this should not be necessary if the crews boresight and lay in carefully. Besides, a perfectly parallel sheaf is not really necessary for suppressive fires.

If the mortars are to concentrate on firing suppressive missions, though, the present authorized ammunition mix must be changed. Currently, the basic mortar ammunition load consists of 70 to 80 percent high explosive rounds. This should be reduced to no more than 50 percent, and the number of white phosphorous rounds should be increased proportionally. In fact, smoke missions will be among the most important of all mortar missions on a mechanized battlefield.

Much can be done to make our mortars more responsive and more flexible. Now is the time to reconsider which mortars to use, how to organize them, and how to employ them. Hopefully, the few ideas presented here will start the process and call forth further discussion.

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