various units fight their own battles, the result is often piecemeal commitment and a failure to concentrate the combat power needed to defeat enemy defenses. Casualties increase, too, when units fight individually and fail to form combined arms teams.

•During attacks, armored personnel carriers must provide machinegun fire to help protect the leading tanks. Overall, suppressive machinegun fire is not used effectively at the NTC. Furthermore, leaders appear to be hestitant about dismounting their troops, even when facing strong antitank guided missile defenses. Finally, when the soldiers are dismounted, their individual fighting positions tend to be too wide and not deep enough to provide them proper protection from enemy fire.

Logistics

During NTC operations, the combat elements often run low on ammunition and fuel because they are not properly resupplied. The first lesson regarding logistics, therefore, is this: Resupply must occur at every opportunity, especially before attacking and immediately afterward. A continuous resupply effort will ensure that units get the supplies they need to handle unforeseen events.

Vehicles should be required to "top off" even when their tanks are nearly full, but adequate cover, concealment, and security must be provided during the refueling operation. Continuous refueling will also ensure that a unit's vehicles are always ready for extended movements.

Company trains must be far enough from their supporting unit to avoid being vulnerable to direct fire; task force trains need to be close enough to be responsive to supporting units. At the NTC, company trains tend to be too close, and task force trains too far back. Furthermore, task forces tend to concentrate entirely on the enemy forces to their direct front. Consequently, their lines of communication are often vulnerable to enemy troops who may have been bypassed or who come around open flanks. Supporting train elements must have proper security. Yet, too often train security elements have no antiarmor weapons with which to defend themselves against enemy armor.

Logistical responsibility for supplying attached elements must be clearly established. This is essential in keeping special equipment operational.

Maintenance deficiencies should be corrected daily. Following a two-week NTC training cycle, units request an average of 6,500 repair parts for their vehicles during their recovery periods. It is obvious from this statistic that units are waiting to correct their vehicle deficiencies during these recovery periods. This is the wrong thing to do; in actual combat, during which operations will have to be conducted for extended periods, maintenance deficiencies must be corrected daily if a unit expects to keep on the move. In short, proper maintenance and an adequate resupply of spare parts are essential for success on the modern battlefield.

It is evident from these lessons learned at the NTC that our combat units must *improve in their training if they are to be* fully prepared for war.

Our combat units, and our supporting elements as well, must be ready to deploy to an active war zone on a moment's notice. Our leaders must take advantage of the lessons learned at the NTC, and must incorporate those lessons into their own training programs. We can afford to make mistakes — and to learn from those mistakes — in peacetime; the price of error in combat is too high.

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NTC: Techniques

LIEUTENANT COLONEL ALAN G. VITTERS

The National Training Center (NTC) at Fort Irwin, California, is one of the finest military training facilities in the world today. Among its unique aspects are an instrumented battlefield and a live opposing force (OPFOR) regiment. Combat realism is achieved through the employment of MILES (Multiple Integrated Laser Engagement System) sensors and monitoring devices and through the OPFOR, which is trained and equipped to challenge the best of our own forces.

The purpose of this article is to share some of the lessons learned and the techniques of combat (or "field craft") devised during one mechanized infantry battalion's rotation at the NTC. Some of these techniques are not particularly innovative, but they seemed to work well in the stressful desert training environment at Fort Irwin.

A unit scheduled to go to the NTC needs to do several things before it deploys.

First, it needs to run an effective leader training program. As the highly professional German Army discovered before World War II, leaders can learn a lot through the use of sand tables, chalk talks, and TEWTs (Tactical Exercises

Without Troops). Today, leaders can add to that list simulations (especially CAMMS and ARTBASS).

An excellent way for leaders to increase their knowledge of the threat (and of the OPFOR they will face at the NTC) is to study and reflect upon the series of NTC-related articles in *Red Thrust Star*, a publication put out by the FORSCOM OPFOR Training Detachment at Fort Hood. It will also help them if they are tested periodically on OPFOR doctrine and tactics.

Another pre-deployment task for commanders is to prepare the family members of the unit's soldiers for this major training event, giving them as much information as possible. Wives appreciate having a better understanding of the environment in which their husbands will be training, and they also need to have a chance to prepare for the extended separation. They may need to plan for paydays, for example, adjust appointment and social calendars, and arrange for Powers of Attorney or other legal assistance.

In addition, family members like to share in the excitement that surrounds an NTC rotation and can often plan separate activities around the unit's departure and its return.

There are some useful devices that the unit can prepare before it leaves for the training center. Since managing direct and indirect fires at NTC will be critical, it will be important for adjacent elements to be able to readily recognize their sectors of fire. One technique for doing this is to use clearly recognizable target reference points (TRPs).

A unit can construct a TRP marker by fastening a plywood board to an engineer stake. If the enemy side of the board is painted a sand color and the friendly side in luminescent paint, such a marker can be effective in both day and night operations. Chemical lights can be hung on the wood panel at night to create a lighted effect. (Unit SOPs should designate team or company colors, and the markers should be painted and issued in compliance with those SOPs.)

Vehicle marking systems that will help the unit identify friendly equipment can also be developed. Such a system is valuable when the battlefield is obscured, when elements get mixed together, and when ground movement needs to be directed from the air. In addition, maps can be printed with TIRS (Target Identification Reference System) points already on them. This way, this information will be less likely to be erased or washed off in the heat of battle.

One of the items the unit should plan to take along is a good mimeograph machine to use in copying orders. At the NTC, written operations orders must be prepared at task force level for each tactical event. It is not uncommon for these orders to be as long as 10 to 20 pages, depending upon the type of operation and the planning time available. Since copies of these orders have to be submitted to the NTC evaluators and, of course, to attached, subordinate, and higher units as well, as many as 30 copies of orders may be required.

The "jelly roll" device is sometimes used, but a mimeograph machine such as the A.B. Dick is more effective. My battalion used one of these machines, and it produced fast, high-quality copies in the field, failing only once when the handle broke.

Once the units begin their training at the NTC, commanders must be aware of the importance of managing time on the modern battlefield. Subordinate units must be given enough time to conduct their planning, write orders, and perform reconnaissance and rehearsals before the battle. Higher headquarters, therefore, should abide by the one-third/two-thirds rule, never using more than one-third of the planning time available in issuing its own directives and orders. Proper adherence to this simple, basic rule of tactical procedure pays dividends and is rewarded at the NTC.

Before each tactical operation, the commander of a unit must make sure his subordinates understand his intent and his concept of the operation. This will enable them to take charge when operations become decentralized and they are left on their own. Controlling the battle by radio may be a luxury the OPFOR's jamming capabilities won't allow. For these and other reasons, it is critical, as the situation permits, for commanders to require subordinate commanders to backbrief them on their plans before crossing the LD. This technique can help reduce some of the self-induced "fog of battle" a unit often experiences.

Whenever possible, commanders (particularly task force commanders) should use attached helicopters to conduct aerial reconnaissances before an operation. These aerial reconnaissances can be particularly valuable during defensive operations in determining the location of fighting positions and in monitoring the progress of construction. (Engineer units can assist in constructing overhead cover to augment the barrier materials available to the infantrymen digging fighting positions.)

In addition, air scouts can be helpful in locating any OPFOR reconnaissance vehicles (BRDMs and motorcycles) that may have penetrated friendly positions by stealth to gather intelligence on friendly positions.

Finally, the single most important skill soldiers need if they are to kill the OPFOR is proficiency with the MILES devices on their individual weapons. Soldiers need to zero their MILES devices before each tactical operation (the OPFOR does this religiously), and they need to develop confidence in the system. They can achieve that confidence by practicing and by learning techniques such as mounting sensor bolts on distant targets and gradually increasing the number of sensors they can engage until they achieve highly accurate MILES firing.

To succeed at the NTC, a unit needs several critical ingredients — its authorized number of personnel, the opportunity and funds to conduct annual ARTEPs, and tactically proficient and competent soldiers at all unit levels. The techniques offered here are not meant to substitute for these ingredients, but they help make *your* unit all that it can be in training for and in going to war.

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