

and number of helicopters that can land safely in a pickup or landing zone. He can mark night landing zones and advise the pilots of obstacles, wind conditions, surface conditions, the enemy situation, and friendly indirect fire around the site. He is familiar with the limitations of various aircraft with respect to ground slope, wind conditions, and other hazards and can educate the leaders in his unit on these matters. He also knows the configuration and the capabilities of medical evacuation aircraft and can call for the air evacuation of casualties.

In addition to his expertise with helicopter landing and pickup zones, a Pathfinder can reconnoiter drop zones and mark them for parachute drops of supplies and equipment by either Air Force cargo aircraft or Army helicopters. For this purpose, he is familiar with the use of the ground marking release system for day or night operations and can put the

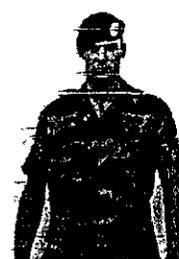
NEW PATHFINDER POI	
SUBJECT	HOURS
Airmovement planning & pickup zones	43.5
Slingload instruction	28.0
Air traffic control	12.0
Drop zone operations	28.0
Medevac operations	3.0
Army aviation overview	1.0
Land navigation test	4.0
HLZ/PZ operations	71.0
	190.5

resupply right where a commander wants it. (Army aviation assets may be conserved by using Air Force cargo planes for resupply when this is feasible.)

A commander can also use a Pathfinder-qualified leader, such as a platoon sergeant or an S-3 Air NCO, for example, to train other leaders and soldiers in the unit on Pathfinder skills. He can teach vehicle rigging and hookup procedures

for slingload operations and can conduct training on helicopter safety, loading procedures and techniques, hand and arm signals, and the marking of night helicopter landing sites using the inverted Y.

In short, a Pathfinder's knowledge applies throughout the airmobile planning sequence. If his commander will tap his expertise, their unit will be able to conduct safer, more efficient operations, which will contribute to the success of its overall mission.



Captain Keith P. Antonia is now assigned to the Ranger Department, USAJS, Fort Benning. He previously served in the Pathfinder Branch of the 1st Battalion (Airborne), 507th Infantry. He was a scout platoon leader in the 2d Battalion (Airborne), 508th Infantry on Grenada in 1983.

Motorized Support Lessons Learned at the NTC

LIEUTENANT KARL P. MONGER

An NTC rotation is a challenge to any type of unit, and logistical support for the unit is a big part of the challenge. Logistical support for a motorized unit in a light infantry brigade is an even bigger challenge.

In early 1986, Company A, 2d Battalion, 60th Infantry (Combined Arms-Heavy)—the first unit in the Army to receive the M966 HMMWV-TOW and to train with it—participated in an NTC rotation as an antiarmor augmentation force for the 1st Battalion, 32d Infantry, 7th Infantry Division (Light).

Supporting the company required a significant support slice. In addition to its own organic elements, the company was augmented by two ammunition trucks

(M35A2, with one M105 trailer and one M149 water trailer), a tank and pump unit (TPU-M54 with 1,200 gallon capacity diesel), a wrecker (M816), a support battalion contact team (M35A2 loaded with ASL parts and an M886 contact truck and three mechanics) and an ambulance with two medics. This large slice proved necessary because a light division does not have the vehicles or the supply capability to support or sustain an attached motorized unit.

Company A, 2d Battalion, 60th Infantry is part of a combined arms-heavy battalion, originally formed under the assault gun concept. Previously outfitted with M901 Improved TOW Vehicles (ITVs) structured into three line platoons

of four vehicles each, the company was reconfigured into four line platoons of five HMMWV-TOWs in each platoon as part of the new motorized MTOE.

Without delving too deeply into tactical play, a light battalion focuses upon stealth, noise and light discipline, and the ability to hide. The amount of supplies and the number of vehicles that can be channeled through the combat trains, therefore, are extremely limited. A daily flow of supplies for Company A, however, includes 21 cases of MREs, 120 TOW rounds, small arms and miscellaneous ammunition, a TPU (diesel) carrying 40 gallons of mogas in cans, package POL (10w40 oil, brake and transmission fluids, and the like), a water buffa-



HMMWV TOW carrier.

lo, batteries, repaired weapons and communications equipment, and any needed repair parts. Given the extremely limited transport capability of the light battalion, this implied the company would encounter some resupply problems. Without detailing the problems, here is the company's final solution and the methods it used to support its operations.

Daily, a company logistics package (LOGPAC) was put together by the company executive officer (XO), and the needed supplies were gathered from the field and combat trains. The TPU was topped off about every other day by either another TPU coming forward from the Forward Area Support Team (FAST) or by taking the TPU to the FAST. Package products were used out of the 15-day basic load carried by the company, while ammunition was drawn from the support platoon in the combat trains. (We filled artillery canisters with sand to simulate the size and weight of the actual TOW rounds.) The MREs were also drawn from the combat trains. Repair parts were obtained from the PLL (prescribed load list), a cannibalization point, and anywhere else possible.

The company resupply and support system was operated by the company

XO. The First Sergeant, as the senior enlisted man and the one with the most combat experience, was freed to help the company commander prepare for and control the flow of battle. The XO monitored the company/battalion command net and the battalion administrative/logistics net (with an AN/VRC-46 and an AN/VRC-47 radio) and was briefed constantly by the company commander on the tactical play.

Daily, the LOGPAC was taken to a company logistics release point (LRP), along with mechanics for forward repair work. The LRP was set up in a hidden location about one terrain feature from the company's forward position. One or two vehicles per platoon would then leave their positions, move along a covered and concealed route to the LRP to draw supplies, and return to the battle position. For fuel and ammunition, all vehicles had to move to the LRP. If the only supplies needed were food and water, a platoon sergeant would offload his vehicle, take all his platoon's empty water cans, and pick up all of his platoon's supplies himself.

When resupply was completed, the remaining supplies in the LOGPAC were taken back to the field trains under the

control of an NCO, while the XO would go forward to the battle position with the mechanics and spare parts. A 2½-ton truck had to be used to fill flat tires, and it would remain forward, to return with the XO. While forward, the XO would receive updates and fragmentary orders on the tactical situation from the commander. (All LOGPACs were run under cover of night.)

Our experience demonstrated the number and type of repair parts that should be stocked in the PLL to support a HMMWV-TOW company of 20 M966s and one M998 in a desert environment (see chart).

Some of these are obvious choices. Others we learned to carry after a number of bad experiences. The constant velocity joint and the half shaft tend to break when the vehicle goes over terrain that causes the wheel on one side to bounce up too high. This hyperextends the joint, which shatters and breaks out of the metal cup. The fuel tank is made of plastic and, until a protective metal plate is designed, can be ruptured by big rocks. The tires, even though "run-flats," must be replaced when slashed on the side walls.

Some other observations on the M966: When the company received its M966s and it mechanics quality checked them, virtually every hydraulic line, hose, clamp, and connection had to be tightened. In particular, after about 50 miles of use, power steering and fuel lines began to leak and had to be tightened again. Brake calipers needed to be in-

ITEM	NSN	QUANTITY
Tank, fuel	2910-01-189-4770	1
Temp send unit	6620-00-993-5566	2
Oil pressure gauge	6620-01-181-1757	2
Temp indicator	6620-01-180-9037	2
Constant velocity joint	3020-01-168-7875	2
Shaft, half front left	2520-01-168-7876	2
Shaft, half front right	2520-01-168-7874	2
Generator pulley	2320-01-198-0633	2
Generator	2920-00-909-2483	1
Key, woodruff	5315-00-816-5526	2
Tire, pneumatic	2610-01-171-4746	5
Belts, V	3030-01-179-7604	2
Valve, tire	2640-00-555-2834	2
Parts kit, fuel filter	4330-01-198-7590	2
Seal, tire	5330-01-176-0923	2
Rim, wheel outer	2630-01-161-0005	2

spected daily because they had a tendency to loosen during use. All wheel lug nuts also had to be checked and tightened.

Operators need to be able, at least, to repair their own tires and check vital fittings for looseness, for, after all, mechanics in the field are not always readily available. But the M966 BII (basic issue items) does not include a jack, and the tools are also limited, consisting of two screwdrivers, an open-end adjustable wrench, and pliers. This is woefully inadequate. (For tires, at the very least, each platoon should own a tire repair kit—NSN 2640-00-922-6921—and each operator should be trained in its use.)

Otherwise, the HMMWV has proved to be an extremely hardy vehicle. The gunner's hatch is constructed so that the supports form a roll cage. (I have seen a HMMWV sit completely upside down in a tank fighting position, not recovered for about eight hours. After recovery and inspection, the vehicle was driven away.

The only damage to it was its broken radio antennas. The occupants were not injured, as they were wearing their seat belts.) The mobility and power of the vehicle is exceptional.

Overall, the NTC rotation taught the company some valuable lessons about logistical support. A light battalion is not currently capable of adequately supporting an attached motorized/mechanized force unless that force is augmented by a support slice. The light battalion's combat trains are not capable of handling the basic load of 120 TOW rounds on a recurring basis, and this number can double or triple when rounds are prestocked in the defense. A light battalion support platoon is not capable of drawing the amount of ammunition required for a TOW company from an ammunition transfer point or of moving that ammunition forward to the LRP. Too often, the light battalion combat trains, which focus upon stealth and the ability to hide,

are given away by the convoy of trucks coming to pick up supplies.

The solution appears to be to have the support package for a HMMWV-TOW company prepared farther back, possibly at the FAST. The company XO can meet the package at a predetermined location (ammunition still loaded on FAST trucks) and escort it as part of the LOGPAC. The current BII and the organization of operator/organizational maintenance items need revision. These lessons, when applied aggressively, can turn the HMMWV-TOW company into a viable, sustainable augmentation force capable of providing a decisive antiarmor force on the modern battlefield.

Lieutenant Karl P. Monger is assigned to the 2d Battalion, 80th Infantry, at Fort Lewis, and has been a rifle platoon leader, support platoon leader, and company executive officer in the battalion. He is a 1983 ROTC graduate of Wichita State University

Modified Platoon Wedge

LIEUTENANT SEAN D. McDEVITT

With the advent of the nuclear age and the increased lethality of small arms, the success or failure of military forces in an armed conflict is largely dependent upon their small unit leaders. The Vietnam conflict emphasized the importance of having small unit leaders who were able to react quickly to a highly mobile and often dispersed enemy, and to engage him decisively. The failure of a small unit leader to engage an enemy force effectively and immediately resulted in loss of contact or, worse, the decimation of his unit.

Today's infantry platoon leader faces the same problems when attacking a highly mobile, dispersed force such as a guerrilla unit. The platoon line formation, the most common movement forma-

tion, simply does not provide the modern-day platoon leader with the highly flexible, instantaneous response he needs to deal effectively with a guerrilla force.

The time needed to react to a small attack, such as a sniper, also poses a problem for the platoon line formation. By the time a platoon leader has had his lead squad deliver a heavy volume of suppressive fire and deployed his second squad to maneuver and destroy the sniper, that sniper usually has had plenty of time to withdraw to another position and resume his harassment.

If an enemy unit is deployed in depth, as in an elastic defense configuration, a few harassing attacks by one or two soldiers can quickly throw an approaching

unit into a state of disarray and low morale, rendering it unable to mount an effective counterattack and maintain contact with the enemy.

Another difficulty with the platoon line formation is that, while it engages the enemy with the smallest unit possible, the formation, being relatively long and narrow, is vulnerable to ambush.

While the platoon line formation offers dispersion and maneuver, a platoon leader is at a severe disadvantage when using it against a guerrilla force. What we need is a formation that allows a platoon leader to react instantly to one or more small attacks and to suppress them while retaining protection from indirect fire and also his ability to contact the enemy with the smallest unit possible.